Part 3: Chronological symbolism in the plates of Mormon:
The Nephite Christian era

3.1 Beginning the book known as Third Nephi

The fifth book in the plates of Mormon starts with all three elements of $Mormon_2$'s standard book beginning text (title, chapter designation, and introductory declaration) plus an apparently optional element (title appositive).[1] The title is "The Book of Nephi". As in $Mormon_2$'s other books, the title includes the name of a principal record keeper mentioned in the book. His sixth book in these plates has the same title. However, the "Nephi" of $Mormon_2$'s fifth book is not the same person as the "Nephi" of his sixth book. The two are father and son.[2] Perhaps by the time $Mormon_2$ was ready to engrave his fifth and sixth books, he had finalized a composition that included his seven books in the plates of Mormon and the six books in the attached small plates of Nephi, and he had created a balanced pattern of record keeper names for the 13 books.

Starting four books in the plates of Mormon:
Lehi, Mosiah, Alma, and Helaman

Central five books in the plates of Mormon and the attached small plates:
Nephi, Nephi, Mormon, Nephi, and Nephi

Ending four books in the attached small plates:
Jacob, Enos, Jarom, and Omni

For two principal reasons, this pattern for naming books (with the name Mormon at its center) did not appear in the 1830 edition of the *Book of Mormon*. The first reason is that many years after $Mormon_2$'s death, his son $Moroni_2$ obtained additional plates, added text to his father's book, and produced his own books of Ether and Moroni.[3] $Moroni_2$'s first major division, the Book of Ether, may have been conceived as modifying his father's central pattern of books to be Nephi, Nephi, Mormon, Ether, Nephi, and Nephi. When $Moroni_2$ later wrote his own personal record, he may have conceived the complete central pattern to be Nephi, Nephi, Mormon, Ether, Moroni, Nephi, and Nephi.

The other principal reason that neither $Mormon_2$'s pattern for naming books nor his son's much later pattern appears in the 1830 edition is that the manuscripts for $Mormon_2$'s first book (Lehi) and for an initial portion of the text of his second book (Mosiah) apparently were lost before they could be copied. As a result, Joseph Smith moved the major divisions in the small plates of Nephi (six original books and Words of Mormon) to the start of the book collection, so as to partially replace the narratives of the books of Lehi and Mosiah that had been lost.[4] Thus, since 1830, $Mormon_2$'s fifth book has appeared as the tenth book in a collection consisting of 14 major divisions, each of which is entitled a "Book", plus a 15th major division that is entitled the "Words" of its writer.

The two books written by $Nephi_1$ in the small plates of Nephi began the 1830 printed collection. However, sometime before they were typeset, the titles of these books appear to have been amended to be "The *First* Book of Nephi" and "The *Second* Book of Nephi" (italics added).

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[1] 3 Nephi title-1:4; see also Division 10, Part 3, "Identifying Major Divisions in the Plates".

[2] 4 Nephi title-title appositive.

[3] Mormon 8:14-Moroni 10.

[4] See Division 1, Part 1, Section 1.7.

In this study, these books usually are referred to as "First Nephi" or "1 Nephi" and as "Second Nephi" or "2 Nephi". The titles of $Mormon_2$'s other two books of Nephi apparently were never changed; however, in the 1879 and subsequent LDS editions of the *Book of Mormon*, the titles of the fifth and sixth books in the plates of Mormon were given the headings "III Nephi" or "Third Nephi" and "IV Nephi" or "Fourth Nephi".[5] This study usually refers to $Mormon_2$'s fifth and sixth books as "Third Nephi" or "3 Nephi" and as "Fourth Nephi" or "4 Nephi".

3.1.1 The title of Third Nephi

The identified record keeper in the title of Third Nephi is $Nephi_3$. His father, $Nephi_2$, was the official Nephite record keeper who completed the record through the end of the 90th Judges calendar year.[6] During the 91st Judges calendar year, $Nephi_2$ appointed $Nephi_3$ to be the new record keeper and then $Nephi_2$ "departed out of the land of Zarahemla ... and whither he went no man knoweth. And his son Nephi did keep the record in his stead".[7] All the narratives abridged by $Mormon_2$ in Third Nephi apparently were recorded by, or under the direction of, $Nephi_3$.

3.1.2 The title appositive, chapter designation, and foreign "preface" in Third Nephi

The book title is followed by a title appositive composed of 58 words. This appositive, as copied into the printer's manuscript, is almost entirely genealogical information: "the Son of Nephi Which was the Son of Helaman & Helaman was the Son of Helaman which was the Son of Alma which was the Son of Alma being a decendant [sic] of Nephi which was the Son of Lehi which came out of Jerusalem in the first year of the reign of Zedekiah the king of Judah".[8] The final composite phrase, the non-genealogical portion of the appositive, contains biographical, chronological, and geographical information that identifies "Lehi", the ancient progenitor of all the other named record keepers.

One of the reasons for relying on the text of the printer's manuscript in the foregoing quotation is that the original manuscript version of the beginning text of Third Nephi has been lost. The extant original manuscript includes less than 30% of the current text of the *Book of Mormon*. The remainder of the original manuscript was destroyed by water and mold between 1841 and 1882, while the manuscript sat in the cornerstone of the Nauvoo House, a hotel in Nauvoo, Illinois. Based on marks that appear on the extant portions of the original manuscript, the compositor appears to have used the original manuscript, rather than the printer's manuscript, to typeset this portion of the 1830 edition.[9] Thus, the text of the original manuscript for the beginning textual elements of Third Nephi may be inferred from two extant copies: the printer's manuscript and the 1830 edition.

The diction of each temporal-expression examined in this Part is identical in both extant copies; so, the diction of such expressions in the original manuscript may be deemed certain. However, the complete title appositive, as it appears in the printer's manuscript, is not what appears in the 1830 edition of the *Book of Mormon*. The same diction appears, but the manuscript appositive was split into two parts, the chapter designation was inserted between the

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[5] Skousen, *Analysis of Textual Variants of the Book of Mormon, Part One*, 42-43.

[6] Helaman 3:21, 37; 16:24-25.

[7] Helaman 16:24-25; 3 Nephi 1:1-3.

[8] Skousen, ed., *The Printer's Manuscript of the Book of Mormon, Part Two,* 777. (manuscript page 363).

[9] Skousen, ed., *The Original Manuscript of the Book of Mormon*, 6-7, 37; idem, "Editor's Preface", in *The Book of Mormon: The Earliest Text*, xxix.

two parts, and the second part of the appositive was typeset in italic font as if it were one of the invented "prefaces" of the 1830 edition.

The separation of the appositive into two parts in the 1830 edition ignored the placement of the first chapter designation, at least as it was copied into the printer's manuscript. The extant manuscript chapter designation occurs after a series of dashes that follow the word "Judah", which is the last word of the appositive. This part of the printer's manuscript was copied from the original manuscript by an unknown "scribe 2". Later, Oliver Cowdery proofread scribe 2's copying and made 81 changes based on the copy's failure to follow the text of the original manuscript exactly. However, Cowdery did not change the placement of the chapter designation in Third Nephi.[10] This suggests that the printer's and original manuscripts both included a 58-word appositive that followed the title and preceded the chapter designation.

Assuming that the text of the original manuscript was identical to the printer's manuscript in its placement of the first chapter designation in Third Nephi, one may conclude that an error was introduced into the 1830 edition. The chapter designation was placed after the initial ten words of the appositive: "the Son of Nephi Which was the Son of Helaman". The other 48 words of the appositive were placed after the chapter designation and were typeset in italic font, as an odd sort of incomplete and misplaced "preface". Indeed, each so-called "preface" that was created when the compositor italicized some part of the beginning text of a major division, whether in Third Nephi or elsewhere in the *Book of Mormon*, appears to be a foreign literary device that confuses, or almost entirely conceals, the standard elements of a major division's beginning text. Presumably, the errors in this regard were made to maintain a practice that had been instituted when the compositor typeset the beginning text of First Nephi and was faced with a few pages of unfamiliar manuscript, unusual diction, and an extended beginning text. Within Third Nephi, however, the fiction of the presumed and foreign "preface" seems to have been made clear by the apparent placement of the chapter designation in the original and printer's manuscripts. In subsequent LDS editions of the *Book of Mormon*, the appositive remained split in two, but the first chapter designation in Third Nephi was placed after the italicized and needless "preface".[11]

3.1.3 The introductory declaration in Third Nephi

Mormon_2's standard introductory declaration consists of four parts that typically follow a chapter designation: content synopsis, contextual statement of chronology, societal description, and verification. These parts often do not appear in this alphabetical order because they are interwoven with quite different narratives in the beginning text of each book. In Third Nephi, the content synopsis is a simple phrase near the end of the introductory declaration: "the record of this people". Except for Mormon_2's occasional personal comments,[12] everything recorded in Third Nephi appears to have been abridged from the record produced and kept during the guardianship of Nephi_3. The verification is equally simple and occurs in the same sentence as the content synopsis: Nephi_3 "did keep the record" in the "stead" of Nephi_2. The societal description appears in the final sentence of the declaration and it prepares the reader for the following narratives about prophetic fulfillment: "the prophecies of the prophets began to be fulfilled more fully for there began to be greater signs & greater miracels [sic] wrought among the people".[13]

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[10] See Division 10, Part 3, Sections 3.3-3.4.

[11] See Division 10, Part 3, Table 3.K.

[12] E.g., 3 Nephi 5:8-26; 28:17-30:2.

[13] Skousen, ed., *The Printer's Manuscript of the Book of Mormon, Part Two,* 777. (manuscript page 363).

The contextual statement of chronology in Third Nephi is lengthy and unusual because it begins in the appositive and is expanded in the introductory declaration with four more temporal-expressions. Most contextual statements of chronology include one temporal-expression. The repetition used to describe this unique point in time clearly indicates its importance within the context of all seven of $Mormon_2$'s books.

3.1.4 The first temporal-expression

The first temporal-expression is part of the title appositive, which traces the genealogy of a new official Nephite record keeper, $Nephi_3$, back to a specific "Lehi" who escaped from Jerusalem "in the first year of the reign of Zedekiah the king of Judah". This temporal-expression and the following 19 temporal-expressions are depicted in Table 3.A of this Division. These are the 20 temporal-expressions associated with the concluding years of the Lehi and Judges eras and the inauguration of the third unique Nephite chronological system, the Nephite Christian or "NC" era. All 20 temporal-expressions are integral to the initial narrative group of Third Nephi.

The first of these temporal-expressions is not a necessary part of the appositive's genealogical record. Because a "Lehi" who "came out of Jerusalem" presumably had been introduced fully in $Mormon_2$'s first major division, the Book of Lehi, his readers may have understood any reference to such a "Lehi". More importantly, they would have had no concern about which king of Judah presided over the destruction of Jerusalem or whether $Lehi_1$ departed in the first, second, or any other regnal year of that king. When the Lord commanded $Lehi_1$ to leave Jerusalem with his family, he did so.[14] Nonetheless, $Mormon_2$ chose to include a temporal-expression in the title appositive of Third Nephi that was nearly identical to part of an expression that occurred as the first temporal-expression in the small plates of Nephi: "the first year of the reign of Zedekiah, king of Judah".[15]

Repeatedly, $Mormon_2$'s personal record honors $Lehi_1$'s and $Nephi_1$'s prophetic and record keeping legacy;[16] so, this use of a nearly identical phrase from First Nephi may have been another way for $Mormon_2$ to pay homage to his ancient ancestors and the prophetic power they received. However, the difficulty with that proposal is that it does not explain why a temporal-expression had to appear in the title appositive at all. $Mormon_2$'s descriptive phrase could have ended with "Jerusalem" or could have simply stated, "which came out of Jerusalem in the reign of Zedekiah the king of Judah". $Mormon_2$ chose neither of these simpler alternatives. Instead, he chose to include a complete temporal-expression with the number-term "the first" in his title appositive. This choice, which provides the cardinal number 1 to $Mormon_2$'s potential Sets, helps to create many different aspects of his chronological symbolism.

3.1.5 The third temporal-expression

$Mormon_2$'s third temporal-expression appears in the simple statement, "and it was six hundred years from the time that Lehi left Jerusalem". This chronological statement includes the first of only two formal it-was expressions in the plates of Mormon. Each it-was expression marks the time when an ancient prophecy began to be fulfilled.[17] The stated cardinal or L

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[14] 1 Nephi 2:1-4.

[15] 1 Nephi 1:4; see also Division 1, Part 6, Section 6.2.2; Division 2, Part 1, Section 1.4; Part 2, Sections 2.2.5 and 2.3.3.

[16] See Division 3, Part 2, Sections 2.2.1, 2.4.3, 2.6.5, 2.7.2, and 2.8.

[17] See Division 1, Part 6, Sections 6.3.4-6.3.5.

number-term "six hundred" provides the number 600 to $Mormon_2$'s potential Sets. This is the first of the five L number-terms in these 20 temporal-expressions. The other four L number-terms appear consecutively near the end of the initial narrative group.

The first and third temporal-expressions in Third Nephi suggest time being measured within the Lehi era context, which began when $Lehi_1$ left Jerusalem and reached a total of 600 completed Lehi calendar years after the end of the 91st Judges calendar year.[18] The Lehi era was the first of three unique eras maintained for different, but overlapping, periods by the priest-astronomers, kings, and chief judges of the Nephite people.[19] The event which began the era, the departure of $Lehi_1$ from Jerusalem when he was commanded by the Lord to leave, is mentioned three times in the beginning text of Third Nephi, together with two descriptions of the departure of $Nephi_2$ from the land of the Nephites. "[W]hither he went no man knoweth".[20] One implication of these repetitions seems to be that $Nephi_2$ had been commanded by the Lord to appoint $Nephi_3$ as the next record keeper and then to depart from the Nephites. Indeed, even after nine more years had passed away, the departure of $Nephi_2$ was noted a third time. He "did not return to the land of Zarahemla and could nowhere be found in all the land".[21]

The initial narrative group of Third Nephi concludes with that last note about the departure of $Nephi_2$. This narrative group starts with the description of Lehi and the first temporal-expression in the title appositive, continues with the four temporal-expressions in the introductory declaration, and then includes 15 more temporal-expressions and their associated narratives that precede the ending narrative note about the departure of $Nephi_2$. Unquestionably, this initial narrative group of Third Nephi has been structured with 20 temporal-expressions.

3.1.6 The second and fourth temporal-expressions

Two temporal-expressions in the contextual statement of chronology describe time in the 92nd Judges calendar year, but they do so only by implication.[22] The second temporal-expression states that "the ninety and first year had passed", which implies that the 92nd year had begun. Even though the time-term in this expression is omitted, both the stated 91st year and the implied 92nd year may be identified as Judges calendar years because a few sentences earlier in the text, the conclusion of the 90th "year of the reign of the judges over the people of Nephi" is noted.[23] The fourth temporal-expression in Third Nephi points to the relevant time as "in the year that Lachoneus was the chief judge and the governor over the land". Clearly, the judges were still reigning over the Nephites. Another implication is that the determiner *the* in the number-term also refers to the then-current or 92nd Judges calendar year. These two expressions provide a stated cardinal number (91) and a referenced number (either no quantity or 92) to $Mormon_2$'s potential Sets.

The alternating placement of actual and implied references to the Lehi and Judges eras in the first four of the five temporal-expressions in the contextual statement of chronology provides a second example of the interaction of these two chronological systems and helps to indicate the

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[18] Helaman 16:24-25; 3 Nephi preface-1:1.

[19] See Division 1, Part 3, Section 3.9; Division 2, Part 1, Section 1.6.

[20] 3 Nephi 1:2-3.

[21] 3 Nephi 2:9.

[22] 3 Nephi 1:1.

[23] Helaman 16:24.

virtually identical lengths of their respective calendar years.[24] Moreover, the alternating placement in the contextual statement of chronology is reinforced by the 17th and 18th temporal-expressions in Third Nephi. These latter two expressions provide a third example of the interaction of the two chronological systems. However, in the 17th and 18th expressions, the end of a Judges calendar year is mentioned first, and the end of a Lehi calendar year is second, in conformity with the Judges calendar years apparently beginning and ending before the most closely related Lehi calendar years.[25] That is, while the Lehi era began long before the Judges era, a Judges calendar year ended before the end of the most closely related Lehi calendar year.

3.1.7 The fifth through the 16th temporal-expressions

The fifth temporal-expression in Third Nephi is the last one in the introductory declaration and it is both express and definite as to the time of the long-awaited prophetic fulfillment that is described in the initial narrative group of Third Nephi. The signs of the Messiah's birth occurred "in the commencement of the ninety and second year". This expression is followed by 11 more consecutive temporal-expressions, and all 12 of them may be grouped into a single letter-set by their omitted time-terms.[26] One is the non-numbered expression "in years" and another is the indefinite expression "for many years". Neither of these two expressions provides a quantifiable number-term to Mormon_2's potential Sets. A third is the referred-quantity expression "in this same year", which provides either no quantity or 92 to the potential Sets. The other nine of these 12 temporal-expressions have stated number-terms that mark the progress of time within the Judges era context: 92, 92, 93, 94, 95, 96, 97, 98, and 99.

3.1.8 The 17th through the 20th temporal-expressions

The last four temporal-expressions in the initial narrative group of Third Nephi[27] all have the same verbal narrative links and express plural year-terms. They all have stated cardinal number-terms that provide Mormon_2's potential Sets with the numbers 100, 609, 9, and 9. Furthermore, the expressions all have express time-terms that are unique in the *Book of Mormon*. The 17th temporal-expression implies a Judges era context; an interval of 100 years had passed "since the days of Mosiah, which was king over the people of the Nephites". The 18th temporal-expression uses the only short name identifying a Lehi era context in the *Book of Mormon*; a 609-year interval had passed "since Lehi left Jerusalem". In the 19th temporal-expression, the time-term is personalized to prophets and implies that the Lehi and Judges eras both had reached the end of their usefulness when nine of their respective years had passed away after the prophesied sign of the Messiah's birth had been observed. This 19th time-term, "from the time which the sign was given which was spoken of by the prophets that Christ should come into the world", is the longest time-term in the *Book of Mormon*. While the 19th temporal-expression in Third Nephi does not state or imply which era context is intended, the previous two temporal-expressions suggest that the 609th Lehi calendar year ended after the 100th Judges calendar year. Hence, this study assumes that the time-term in the 19th temporal-expression is most closely linked to the Lehi era context, but includes the end of 100 Judges calendar years. With the 20th and last temporal-expression in the initial narrative group of Third Nephi, the inauguration of the NC era

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[24] See Division 1, Part 3, Section 3.7.5.

[25] Compare Mosiah 29:37-46.

[26] 3 Nephi 1:4, 18, 25-29; 2:1, 4.

[27] 3 Nephi 2:5-8.

and its unique era context are implied. The second-mentioned 9-year interval had passed "from this period which the sign was given, or from the coming of Christ". This time-term also is unique in that it conjoins two possible time-terms and in that the entire conjoined phrase has been placed before the number-term and year-term. Nothing like this time-term/number-term/year-term structure occurs anywhere else in the *Book of Mormon*.

Thus, this textual group of 20 temporal-expressions begins with four alternating era temporal-expressions in the appositive and contextual statement of chronology (the first of which mentions Lehi_1's departure from Jerusalem). And this group ends with two more alternating era temporal-expressions (the 17th and 18th), a penultimate 19th temporal-expression suggesting the end of both previous alternating calendar counts, and a final 20th temporal-expression that implies the sign of the Messiah's birth date had occurred 600 years after the Lord commanded Lehi_1's escape from Jerusalem. None of this chronological structure and diction appears to have been accidental, careless, or coincidental. The temporal-expressions and their placement appear to have been carefully planned.

Subsequent Parts of this Division address the symbolic implications of the other 51 temporal-expressions in Third Nephi. This Part 3 analyzes the chronological structure and symbolism related to the narratives that begin Third Nephi. This Part also proposes dates for the beginning and inauguration of the NC era as symbolized in the initial narrative groups of Third Nephi and the Book of Mormon, and then the analysis concludes with an examination of the end of the NC era as depicted in Mormon_2's personal record.

3.2 Number pattern symbolism of the 20 temporal-expressions

Twenty temporal-expressions provide chronological structure to the initial narrative group of Third Nephi, which begins with narratives about record keepers and the signs of the Messiah's birth. The first five of these 20 expressions establish the time when prophecies about such signs and birth were fulfilled. During "the commencement of the ninety and second" Judges calendar year, when the 600th Lehi calendar year had reached its end, the sign of a night without darkness occurred and, perhaps on a subsequent night when stars could be seen again, the sign of a "new star" appeared. "[T]hey knew that the prophets had testified of these things for many years". When the sun reappeared to end the night without darkness, "it was the day that the Lord should be born".[28]

3.2.1 Twenty human fingers and toes

The total number of the 20 temporal-expressions suggests a connection with Mesoamerican counting and the human body. For the Aztecs, the number 20 was "one full count", meaning all 20 fingers and toes. For the Maya who flourished hundreds of years earlier, the number 20 was known by several words, one of which was "the term for 'man' or 'human being' and in this context refers to the totality of his digits".[29] The base-20 or vigesimal numbering system in Mesoamerica was not unique. Similar numbering systems apparently have been found among various peoples in all the continents and in Oceania.[30] The time when this system began to be used in Mesoamerica is not known, but it seems to have been fundamental to some of their most

[28] 3 Nephi 1:4-21.

[29] Fagan, *The Aztecs*, 214; Closs, "The Mathematical Notation of the Ancient Maya," 293.

[30] A. Seidenberg, "The Zero in the Mayan Numerical Notation," in Closs, *Native American Mathematics*, 382-383.

ancient calendars.[31] For some Mesoamerican peoples whose priest-astronomers maintained a 360-day calendar, the system included both numerical place values and a written zero.[32] Thus, it seems reasonable to suggest that the 20 temporal-expressions placed in the initial narrative group of Third Nephi symbolize the long expected birth of the Messiah into a human body with 20 fingers and toes.

This suggested symbolism may be supported by a couple of the ways that the 20 temporal-expressions are subdivided textually. Third Nephi begins with five temporal-expressions in the standard beginning text. One of these expressions appears in the title appositive and the other four appear in the introductory declaration. These five expressions may symbolize a human thumb and four fingers, and a normal parental concern at the time of a child's birth. Moreover, a single stated cardinal or L number-term appears in the standard beginning text of Third Nephi and the other four L number-terms appear in the final temporal-expressions that describe the time when the NC era was instituted to remember and honor both the 600-year prophecy of Lehi_1 and the signs of the Messiah's birth. Hence, two human hands (each a different form of the number pattern 1 and 4) and the birth of a human baby (all 20) may be symbolized.

3.2.2 The number nine depicted by the two hands

The first of the five L number-terms that may symbolize a hand occurs in a temporal-expression within the beginning standard text of Third Nephi, where the other hand appears to be symbolized. Hence, the two symbolic hands also may be described as depicting a count of the number nine (1-5 within the beginning text and 6-9 at the end of the initial narrative group). Some Mesoamerican depictions of numbers used in calendrical contexts rely on pictures of a human thumb (apparently representing 1) and the human hand in various positions (apparently representing 2 through 5).[33] Furthermore, the number nine in the context of a human birth could suggest the nine synodic months that approximate the period of human gestation[34] and/or the nine Mesoamerican "lords of the nights" sometimes associated with death and the underworld.[35] With every pregnancy and birth, the possibility of death for the mother and/or the child is always present. With every new human life, death is certain to be its temporal end.

3.2.3 The (1 followed by 12) number pattern

In connection with the theme of birth, the 13 omitted time-terms in these 20 temporal-expressions may not be overlooked or ignored. During Lehi_1's vision of the throne of God and his calling to be a prophet of the Lord, he saw a being come down to earth from heaven whose "luster was above that of the sun at noonday". He was followed by 12 other beings whose "brightness did exceed that of the stars in the firmament". All 13 "went forth upon the face of the earth", just as other humans do.[36] As Table 3.A depicts these 20 temporal-expressions, the second one in Third Nephi has no express time-term. Then, a couple of temporal-expressions later, 12 consecutive temporal-expressions occur, none of which has an express time-term. This

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[31] Edmonson, *The Book of the Year: Middle American Calendrical Systems*, 98-101, 111-17.

[32] Closs, "The Mathematical Notation of the Ancient Maya," 291-292.

[33] E.g., Aveni, *Empires of Time*, 192-93.

[34] Compare Aveni, *Empires of Time*, 200.

[35] See Division 2, Part 2, Section 2.5.3; Thompson, *Maya Hieroglyphic Writing: Introduction*, 208-12, 214.

[36] 1 Nephi 1:9-11.

omitted time-term number pattern (1 followed by 12) may symbolize Lehi$_1$'s vision of the births of the Messiah and his 12 apostles into mortal life "upon the face of the earth".

Within the Mesoamerican "concept of eternal time",[37] conception, pregnancy, birth, and death seem to have been related to astronomy. "[O]ne of the stars in the sky [comes] back to earth as the soul" of a newborn. Souls of the dead apparently return to be stars in the sky and "the souls of the dead warriors and of women who have died in childbirth" become "stellar deities" with powers they exert on earthly inhabitants.[38] Sun and moon are involved, too. Among the Maya, eclipses "are often associated with crop failure and birth defects. Lunar eclipses are specifically regarded as damaging to fertility".[39] "Throughout the Maya area, eclipses are believed to cause illness and death and to be particularly dangerous to pregnant women".[40] Eclipses also were associated with infants suffering from "gastrointestinal problems".[41] When conception, birth, and infancy are timed to avoid eclipses, detailed eclipse record keeping and prediction by priest-astronomers become crucial parts of priesthood, community, and family life.

The length of the 260-day ritual almanac also may have been associated with both human and agricultural fertility, including the duration of human pregnancy.[42] Mesoamericans congregated to celebrate births, as well as marriages, other religious events, and festivals. For a birth, both a midwife and a priest-astronomer seem to have been involved. A birth ceremony appears to have existed, including a bath for the baby in the sweathouse and a sweatbath for the mother "to restore the 'heat' or energy that [she] lost during childbirth".[43] A day name in the 260-day calendar, the child's "birth name", appears to have been given to the baby "presumably to reflect their date of birth or some hoped-for augury that would come from such an association".[44] Uniform ceremonies, celebrations, name associations, and results of eclipse prediction need not be assumed; the opposite seems more likely. With the ritual almanac itself, Thompson noted that "[t]here is a striking disagreement as to the values of the days in terms of benevolence and malevolence", even from village to village within a people speaking the same language.[45] A child also may have received a "childhood name" and an elite child may have obtained a "throne name" at the time of accession.[46]

3.2.4 Interwoven patterns of the numbers 7, 13, and 20

While the 13 omitted time-terms may suggest human births, the heavenly origin of the human spirit, and the omnipresence of death, the two interwoven numbers 13 and 20 also may be deemed to represent the Mesoamerican ritual almanac, the 260-day calendar. This calendar has been called "*the* centerpiece of the Maya calendar system".[47] Its days were "[e]verywhere

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[37] Thompson, *Maya Hieroglyphic Writing: Introduction*, 90; compare 1 Nephi 10:19; Alma 7:20; 37:12.

[38] Thompson, *Maya Hieroglyphic Writing: Introduction*, 84-85.

[39] Grofe, "Glyphs G and F: the cycle of nine, the lunar nodes, and the draconic month", 143.

[40] Milbrath, *Star Gods of the Maya*, 27; see also Aveni, *Empires of Time*, 201-02.

[41] Beck, "Maya Eclipses: Modern Data, the Triple Tritos and the Double Tzolkin", 20.

[42] Aveni, *Empires of Time*, 200; Edmonson, *The Book of the Year: Middle American Calendrical Systems*, 98; Susan Milbrath, "Maya Astronomical Observations and the Agricultural Cycle", 497-98; Thompson, *Maya Hieroglyphic Writing: Introduction*, 98.

[43] Wright, "A Study of Classic Maya Rulership", 245; see also Bierhorst, *The Mythology of Mexico and Central America*, 30, 108.

[44] Houston, "'Chronosophy' in Classic Maya Thought", 204; Thompson, *Maya Hieroglyphic Writing: Introduction*, 66. Aveni, *Empires of Time*, 200.

[45] Thompson, *Maya Hieroglyphic Writing: Introduction*, 88.

[46] Wright, "A Study of Classic Maya Rulership" 54-55.

[47] Aveni, *Empires of Time*, 197, italics in the original. See also Schele and Freidel, *A Forest of Kings*, 79-81; Edmonson, *The Book of the Year: Middle American Calendrical Systems*, 1-5.

sacred", in addition to being "preserved in oral and written form with remarkable tenacity and conservatism".[48] The days were repeated without any insertion of an intercalary day or any other break in the constant count of 260 sacred days each year. The ritual almanac was "the single most important block of time"[49] measured in Mesoamerica.

If a 13-day cycle is deemed to be interwoven with a 20-day cycle by the 13 omitted time-terms, then one must also note that the seven express time-terms are similarly interwoven, that a 7-day cycle of time also is suggested, and that this interwoven pattern of the numbers 7, 13, and 20 also occurs with year-terms and their narrative-links. Thirteen of the 20 year-terms are singular nouns and seven are plural nouns. Seven of the narrative-links are prepositional. One of them occurs in the title appositive and the other six occur in the following narratives, thereby separating the number 7 into a (1 and 6) number pattern consistent with the week apparently described in the brass plates.[50]

Ten of the remaining 13 narrative-links are verbs and the other three are conjunctions. The conjunctions (*and*) connect their year-related expressions to the preceding verbal narrative-link (*did pass*), which adds its verbal meaning to the conjunctional narrative-links. This separation of the number 13 into a (10 and 3) number pattern is consistent with the secular cardinal number system of Mesoamerica, which "was generally decimal, though there are indications in a number of the languages of other numerical bases.... In at least two cases, the 13-day count used a special tridecimal number system to this purpose.... And in two others ... the count was from 2 to 14 instead of from 1 to 13."[51] Thus, the (10 and 3) number pattern of the remaining 13 narrative-links appears to be consistent with many of the secular Mesoamerican cardinal number systems.

A 7-day week with a sacred seventh or Sabbath day also is mentioned in temporal contexts in the plates of Mormon long before the birth of the Messiah and it seems to have been observed for hundreds of years.[52] The implication of consistent use of a 7-day week by the Nephite believers also may be symbolized by the seven express time-terms in the first 20 temporal-expressions of Third Nephi. These time-terms are associated with all three Nephite eras. The placement pattern of the time-terms appears to alternate, in groups of two, between the Lehi era and the Judges era until six of the seven time-terms appear in the pattern. Then, the final placement is a single time-term identifying the new NC era, as shown in the following list.

3 Nephi	Lehi era	Judges era	NC era
preface	of the reign of Zedekiah the king of Judah		
1:1	from the time that Lehi left Jerusalem		
1:1		that Lachoneus was the chief judge and the governor over the land	
2:5		since the days of Mosiah, which was king over the people of the Nephites	

[48] Edmonson, *The Book of the Year: Middle American Calendrical Systems*, 169.

[49] Aveni, *Empires of Time*, 197.

[50] E.g., Genesis 2:2-3; Exodus 16:23-30; 20:10-11; Deuteronomy 5:12-15.

[51] Edmonson, *The Book of the Year: Middle American Calendrical Systems*, 4-5.

[52] See Division 1, Part 1, Section 1.9.4.

3 Nephi	Lehi era	Judges era	NC era
2:6	since Lehi left Jerusalem		
2:7	from the time which the sign was given which was spoken of by the prophets that Christ should come into the world		
2:8			from this period which the sign was given, or from the coming of Christ

This placement pattern leaves no doubt that, at least among the faithful Nephites, the most sacred of the seven symbolized days was the seventh. In a Mesoamerican context, a 7-day cycle has been suggested as a separate day count (seven "lords of the earth") and as a component of the 819-day cycle (7x9x13 = 819). While little seems certain yet about either of these apparently ancient measurements by the Maya, a recent article suggests synodic planetary period accords for the 819-day count.[53]

A different interwoven pattern of the numbers 7, 13, and 20 also may be deemed to occur with the formal and informal temporal-expressions—if one makes the assumption, as Mormon_2 may have, that Lehi_1 finally departed from Jerusalem "in the first year of the reign of Zedekiah the king of Judah".[54] Mormon_2 may have considered this phrase to be a formal whole-year or *A* expression rather than an informal stated-time-relation or *Q* expression. More precisely, he seems to have thought that the time-term "of the reign of Zedekiah the king of Judah" was a personalized reference to the monarch's reign in which the Lehi era began and that the number-term "the first" identified Zedekiah's regnal year in which the Lord commanded Lehi_1 to leave the city. As thus classified, the temporal-expression in the title appositive is the first of 13 formal temporal-expressions in the 20 temporal-expressions of the initial narrative group of Third Nephi. Of course, the other seven expressions are informal.

The temporal-expression in the title appositive identifies "the first year of the reign of Zedekiah the king of Judah" as the time when Lehi_1 left Jerusalem. When Mormon_2 was searching through the official plates of Nephi, he found the small plates of Nephi,[55] where Nephi_1 identifies this year as the time when Lehi_1 experienced visions and was called to prophesy the pending destruction of Jerusalem.[56] Nephi_1 does not identify this year as the one in which the Lord commanded Lehi_1 to escape. Nonetheless, among the Nephites, the killing of a rejected prophet could be immediate. When Abinadi was sent a second time to prophesy to king Noah_2 and his wicked Nephites, the prophet's execution seems to have occurred in much less than a year.[57] When Samuel_2 the Lamanite was sent back by the Lord to prophesy to the wicked Nephites at Zarahemla, they attempted to kill him that very day.[58] When some of the Nephite prophets sought to forestall the destruction of the Nephite government in the 30th NC calendar

[53] John H. Linden and Victoria R. Bricker, "The Maya 819-day Count and Planetary Astronomy", *Ancient Mesoamerica, First View*, 1-11, published online April 18, 2023 DOI: https:/doi.org/10.1017/S0956536122000323. See also Berlin and Kelley, "The 819-day Count and Color-direction Symbolism among the Classic Maya", 9-20; Grofe, "Glyphs G and F: the cycle of nine, the lunar nodes, and the draconic month", 149; Milbrath, *Star Gods of the Maya*, 110, 231-33, 235, 240-44; Schele and Freidel, *A Forest of Kings*, 78; Thompson, *Maya Hieroglyphic Writing: Introduction*, 212-17; compare Aveni, *Empires of Time*, 204-07.

[54] 3 Nephi preface.

[55] Words of Mormon 1:3-8.

[56] 1 Nephi 1:4-20.

[57] Mosiah 11:20-17:20.

[58] Helaman 13:1-16:8.

year, they were arrested and murdered without due process or delay.[59] When $Mormon_2$ was "visited of the Lord" in his 16th year of age, he attempted to preach, but the Lord apparently forbade it to preserve his life.[60] Hence, when $Lehi_1$ experienced his first vision of a pillar of fire, returned to Jerusalem, was commanded in a second vision to preach to his people, and immediately did so,[61] $Mormon_2$ could have reasonably assumed that $Lehi_1$'s ministry at Jerusalem lasted just a few days or, at most, a few months within the same regnal year of king Zedekiah in which $Lehi_1$ had received the prophetic calling. Did $Mormon_2$ have access to other records that stated or implied the time when $Lehi_1$ was commanded to leave? On that specific point, the *Book of Mormon* is silent; however, there can be no doubt that the number pattern and number-term symbolism in the initial narrative group of Third Nephi was made possible by the placement of a temporal-expression in the title appositive that provided the number 1 to $Mormon_2$'s Sets.

3.2.5 Symbolizing Mesoamerican 365-day calendar months

When $Mormon_2$ placed his first temporal-expression in the title appositive, the following four temporal-expressions in the introductory declaration and the subsequent 15 temporal-expressions seem to have been positioned to symbolize Mesoamerican 365-day calendar months that had either five days or 20 days each. In each case, the temporal-expression in the appositive seems to represent the "seating" day of the month. Each of the 18 typical months of the calendar apparently had the "seating" of the month (usually designated in modern scholarship with 0) followed by 19 days counted with numbers from 1 through 19. These 18 months totaled just 360 days; so, a 19th month of five days was added to complete the 365-day year. The 5-day month also apparently began with the "seating" of the month followed by four days counted with the numbers 1 through 4.[62]

The number of months in this symbolic Mesoamerican solar calendar may be indicated by the 18 temporal-expressions with number-terms that can be associated with definite numerical values either because they are stated ordinal or cardinal number-terms or because they refer directly to a stated ordinal number-term. A 19th temporal-expression has a common number-term that cannot be associated with a definite numerical value. This 19th expression may represent the Mesoamerican "calendrical hiatus" month composed of five "useless, lost, or even nameless" days.[63] One of the 20 temporal-expressions has no number-term at all; so it apparently may be disregarded as having any relevance to the 365-day calendar.

3.2.6 The *winal* or 20-day month in the 360-day *tun*

In the Long Count (360-day) *tun* adopted by some Mesoamerican peoples, the counted days, months, and years were recorded in terms of place values. A number in the *k'in* or day position recorded days 1 through 19. A number in the *winal* or month position recorded months 1 through 17 and a number in the *tun* or year position recorded years 1 through 19. Higher values for 20 years (*k'atun*) and 400 years (*b'aktun*) also were measured. In modern representations, these

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[59] 3 Nephi 6:19-24.

[60] Mormon 1:15-17; compare 2:28-3:3.

[61] 1 Nephi 1:4-20.

[62] See Division 2, Part 3, Section 3.10; Thompson, *Maya Hieroglyphic Writing: Introduction*, 119-20.

[63] Edmonson, *The Book of the Year: Middle American Calendrical Systems*, 10; see also Thompson, *Maya Hieroglyphic Writing: Introduction*, 106 n.6, 117-18.

chronological positions and values typically are written horizontally and separated by periods, with diminishing position values recorded from left to right: *b'aktun.k'atun.tun.winal.k'in*. A zero was integral to this chronological system. Days 1 through 19 in a month were counted in the *k'in* position of the calendar, but the following 20th day of the month was counted in the *winal* position of the calendar and the *k'in* position returned to 0. Hence, as the count of a 20-day period progressed, the day number would advance from 0.0.0.0.1 to 0.0.0.0.19 and then the 20th day was signified by 0.0.0.1.0.[64] When Mormon$_2$ placed his 19 temporal-expressions having to do with the Lehi and Judges eras before the 20th expression having to do with the NC era, he may have been suggesting the distinctly different way that 19-day and 20-day counts were recorded in the 360-day calendar.

As with the number of months in the 365-day calendar, the number of *winal* in a 360-day *tun* may be indicated by the 18 temporal-expressions with number-terms that can be related to definite numerical values either because they are stated ordinal or cardinal number-terms or because they refer directly to a stated ordinal number-term. In this part of the proposed number pattern analysis, the two temporal-expressions that cannot be quantified numerically appear not to be relevant because the *tun* did not include any "useless" or "nameless" days.

3.2.7 The symbolic moon

The 20 temporal-expressions that begin Third Nephi all are associated with the sign of a night without darkness that had been revealed to the Nephites by a visiting Lamanite prophet known as Samuel$_2$. In describing this sign, he mentioned "great lights in heaven", "the rising of the sun and ... its sitting", and "no darkness".[65] Presumably, the moon, as one of the "great lights in heaven",[66] would be mentioned in the record of the prophecy's fulfillment. However, Mormon$_2$'s report in Third Nephi notes that "at the going down of the sun there was no darkness" and that "the sun did rise in the morning again, according to its proper order", but the moon is not expressly mentioned.[67] Was it the time of astronomical new moon, so that the moon was not visible? Or was the moon full throughout the night as one of the truly "great lights in heaven"? Is it merely coincidental that in a Mesoamerican chronological context, the number 20 could be symbolized by a moon glyph?[68] Do Mormon$_2$'s 20 temporal-expressions imply a role the moon played in the night without darkness? As these 20 temporal-expressions are analyzed in this Part, potential answers to the foregoing questions about lunar astronomy are proposed. The number-term Sets, Set-sums, and Set-contexts in the initial narrative group of Third Nephi are examined in detail.

3.3 Set-context symbolism in the 20 temporal-expressions

Sixteen number-terms in the initial narrative group of Third Nephi include 11 stated ordinal or K number-terms and five stated cardinal or L number-terms. These 16 number names may be examined by themselves and by adding them into every possible combination for a total of 65,535 stated numbers and combination sums. Two additional common or M number-terms refer

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[64] See Division 2, Part 3, Section 3.11.

[65] Helaman 14:3-4.

[66] Genesis 1:14-19.

[67] 3 Nephi 1:15, 19.

[68] Thompson, *Maya Hieroglyphic Writing: Introduction*, 237-243.

to prior stated or implied number-terms. Because these M number-terms do not actually state an ordinal or cardinal number name, it is possible to consider them to be non-quantified number-terms. However, given the position and diction of these M number-terms, it is also possible to consider them to represent definite numbers. The two number names referenced by the M number-terms may be considered to create 196,608 more combinations with each other and the 16 stated number names.

For each of the foregoing combinations, the process of combination assumes that a number name stated or referenced in a number-term is not used twice in a single combination and that the order of the number-terms is not consequential. However, the analysis in this Section 3.3 is based on the assumptions that the texts of the initial narrative group of Third Nephi both limit and direct the combination process. The significant textual facts are the diction, language typology, and sequential placement of the temporal-expressions, as they may be further qualified by the secondary language of their associated narratives. The analytical types, structural categories, and placements of the year-, time-, and number-terms, narrative-links, and temporal-expressions in the initial narrative group of Third Nephi are listed in Table 3.A. These textual facts are assumed to be consequential. Such facts, as analyzed like the Set-based examinations of the small plates of Nephi in Division 2 of this source book and the Set-based examinations of the Book of Mormon in Part 2 of this Division 3, appear to limit the number-terms and their potential combinations to the 250 Sets and their 387 alternative Set-sums and 140 unique Set-sum values that are included in the following detailed analysis.

For the Set-based analysis of the first narrative group of Third Nephi to be as comprehensive as, and comparable to, the related examinations of the other four narrative groups of Third Nephi, the potential Sets examined in this Part include all that are suggested by the sequential placement of the various year-, time-, and number-term, narrative-link, and temporal-expression types or categories, without regard to what appear to have been the number and letter patterns that may have been intended by Mormon.

In other words, while the apparent chronological structures in the initial narrative group seem as organized as the apparent structures of the small plates and the Book of Mormon, this study proposes that the narrative group structures in Third Nephi seem to disintegrate into elementary variable sequence patterns as the NC era context progresses during the years reported in the third and fourth narrative groups of Third Nephi. This apparent degeneration or fragmentation was not expected but, at a narrative group level of symbolism, it seems appropriate to the fateful conflicts and destruction that tormented the Nephites during the 16th through the 30th NC calendar years reported in Third Nephi. Thus, the destruction and disintegration of Nephite society during those years may be symbolized by the disjointed letter patterns of the third and fourth narrative groups.

The analysis in this Part includes both the balanced and reversible structures that seem to have been organized in each narrative group, to the extent they may be ascertained, and other potential variable sequence letter patterns based primarily on placement sequence. Table 3.B includes the complete list of potential Sets and their associated Set-sums and related astronomical and calendrical accords with the 47 interval lengths set forth in Table 3.A of Part 3 of Division 2. The Table 3.B list of 250 potential Sets perhaps indicates a more comprehensive view of the Nephite priest-astronomers' careful astronomical and calendrical observations and record keeping. The other tens of thousands of possible combinations and their combination sums are deemed by this study to be incidental rather than limited and directed by the text of the initial narrative group of Third Nephi.

3.3.1 Set-contexts related to year-term letter-sets

Two of the three analytical types of year-terms appear in the first 20 temporal-expressions of Third Nephi: express singular or A; and express plural or B. Their simple (ABABABAB) letter-group consists of eight alternating (A) and (B) letter-sets that also may be viewed as four (AB) letter-groups or, perhaps like $Nephi_1$'s overlapping and alternatively delimited year-term letter-groups,[69] as two balanced and reversible (ABA[B]ABA) and (BAB[A]BAB) letter-groups. The Sets associated with these structural alternatives are included in Table 3.B.

These eight year-term letter-sets appear to be organized at a narrative level that is separate from, but overlaps, parts of the two, longer, multi-book placement patterns of year-terms in the plates of Mormon.[70] The two larger year-term placement patterns involve hundreds of temporal-expressions. One of the proposed multi-book patterns (208 year-terms organized as 45 year-term letter-sets) appears to end with the first four year-terms in Third Nephi. The following multi-book pattern (101 year-terms organized as 34 year-term letter-sets) begins with the fifth year-term in Third Nephi and continues to the first year-term in the last verse of Fourth Nephi.

Neither of these lengthy placement patterns suggests a governing structural influence on the use of year-terms in the initial narrative group of Third Nephi. The first of these multi-book patterns ends with the last A year-term in 3 Nephi 1:1 and the second begins with the following A year-term in 3 Nephi 1:4. The separation of these consecutive A year-terms into different placement patterns draws attention to them and to the change in official Nephite record keepers that is narrated in 3 Nephi 1:2-3. Usually, consecutive A year-terms would be grouped in the same (A) letter-set. In the initial narrative group of Third Nephi, they are in fact combined in the second (A) letter-set of the 20 temporal-expressions. The analysis in this Part focuses on the initial narrative group; so, the underlying multi-book year-term placement patterns in the plates of Mormon likely are not relevant to the narrative level of analysis and are not examined here.

The 38 potential Sets associated with the eight (A) and (B) letter-sets in the initial narrative group of Third Nephi are listed together in the Data section of Table 3.B. These Sets produce 63 alternative Set-sums, 33 unique Set-sum values, and 120 Set-contexts (close or near accords with the 47 interval lengths set forth in Table 3.A of Division 2). A square box sometimes appears in Table 3.B under the category of Set-sums. Each box represents either a non-quantifiable number-term or a non-quantified alternative to the related Set-sums, but it is not considered to be a numerical Set-sum or zero (0). Thirty of the year-term Set-sums are duplicated by the Set-sums of following year-term Sets; so, each of the following identical Set-contexts are noted by the parenthetical "(see above)". Only close accords with definite day counts (e.g., 7-day week or 20-day cycle) are included in this table.

Nine (14.3%) of the 63 alternative Set-sums do not suggest any Set-context. Fifty-seven (47.5%) of the 120 potential Set-contexts represent close accords. The other 63 potential Set-contexts (52.5%) represent near accords. Three (2.5%) of the Set-contexts involve factors of single intervals. The remaining 117 (97.5%) involve one or more multiples of intervals or half intervals. Six (18.2%) of the 33 unique Set-sum values (184, 555, 727, 948, 1247, and 2183) perhaps may be considered incidental to the proposed symbolism because they do not imply any close or near accord.

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[69] See Division 2, Part 1, Sections 1.4-1.5.

[70] See Division 3, Part 1, Section 1.2.1.

3.3.2 Set-contexts related to time-term letter-sets

Three analytical types of express time-terms appear in the first 20 temporal-expressions of Third Nephi: official name or D; altered name or F; and personalized name or G. The implied analytical type (omitted name or H) also is considered in this narrative level of the analysis. The variable sequence letter pattern in these 20 expressions (GHDGHGDGF) initially may seem haphazard, but the organized (7 and 13) time-term number patterns proposed in Section 3.2.3 above suggest otherwise. If the four (AB) year-term letter-groups are taken as a guide, the time-term letter pattern may be understood as (GH)(DG[H]GD)(GF). The central letter-group is a five-part, balanced, and reversible pattern that is common in the small plates of Nephi and Book of Mormon,[71] and perhaps is closely related to counting with the five digits of a single hand. The two-part (GH) and (GF) letter-groups contrast the NC era inauguration time-term (F) with an omitted time-term (H) related to the Judges era context, which may have officially ended or vanished with the NC era inauguration. The combinations of time-term letter-sets in this Section 3.3.2 are depicted in the Data section of Table 3.B of this Division and are governed by the text of the initial narrative group of Third Nephi.

Again, the proposed time-term letter patterns that extend throughout the plates of Mormon are not considered in the examination in this Part. Like the potential year-term placement patterns in the plates of Mormon, the time-term placement patterns are multi-book patterns based solely on the diction of express time-terms. The lengthy time-term placement patterns apparently do not take omitted name or H time-terms into consideration. The central [G] letter-set of the Helaman/Third Nephi nine-part time-term letter pattern (GDGD[G]DGDG) occurs in the title appositive of Third Nephi. The first (F) letter-set of the Third Nephi/Fourth Nephi/Mormon seven-part time-term letter pattern (FDG[D]GDF) occurs in 3 Nephi 2:8 and is the last time-term in the 20 year-related expressions of the initial narrative group in Third Nephi. Once more, the letter patterns in the initial narrative group of Third Nephi seem to evidence a narrative level of organization that overlays parts of the last two, multi-book, time-term placement patterns in the plates of Mormon.

The 58 potential Sets associated with the (D), (F), (G), and (H) letter-sets in the initial narrative group of Third Nephi produce 96 alternative Set-sums, 63 unique Set-sum values, and 184 Set-contexts. When a time-term Set-sum duplicates a previous year- or time-term Set-sum, the associated Set-context or Set-contexts are noted in Table 3.B by the parenthetical "(see above)".

Eighteen (18.8%) of the 96 alternative Set-sums do not suggest any Set-context. One hundred twenty-three (66.8%) of the 184 potential Set-contexts represent close accords. The other 61 potential Set-contexts (33.2%) represent near accords. Twenty-one Set-contexts (11.4%) involve factors of single intervals and 163 (88.6%) involve one or more multiples of intervals or half intervals. One (1.6%) of the 63 unique Set-sum values is the number 1. This value suggests a Set-context of a single day, which is assumed to have no close or near accord, rather than to have every possible close or near accord. Eleven more (17.5%) of the 63 unique Set-sum values (202, 618, 691, 701, 718, 1411, 1657, 1731, 2174, 2265, and 2441) perhaps also may be considered incidental to the proposed symbolism because they do not imply any close or near accord.

[71] See Division 2, Part 2, Sections 2.2.3 and 2.2.4; Part 3, Section 3.12.4; Division 3, Part 2, Sections 2.2.3, 2.4.2, 2.5.1, 2.5.3 and 2.7.4.

3.3.3 Set-contexts related to number-term letter-sets

Three analytical types of express number-terms appear in the first 20 temporal-expressions of Third Nephi: stated ordinal or K; stated cardinal or L; and common name or M. The implied analytical type (absent name or P) does not indicate any numerical quantity; so, it does not add any amount to a potential Set-sum. From a structural standpoint, the potential (P) letter-set may be understood as separating two (K) letter-sets or, if it is disregarded as a structural component, the two (K) letter-sets may be deemed to form a single (K) letter-set. If the (AB) year-term letter-groups and (GH) and (GF) time-term letter-groups are taken as a guide and if the potential (P) letter-set is disregarded, the letter pattern may be understood as three (KL)(MKM)(KL) letter-groups. A central (MKM) letter-group is balanced and reversible, like the central letter-group of the time-terms. Alternatively, if the potential (P) letter-set is considered to be a structural component, the letter pattern may be understood as having a variable sequence MKMKP central letter pattern. Both potential letter patterns are included in the analysis.

The lengthy number-term letter patterns that extend throughout the plates of Mormon are not considered in this Part. Like the potential year-term and time-term placement patterns in these plates, the number-term placement patterns sometimes are multi-book patterns. The central [K] letter-set of the proposed, balanced but non-reversible, Helaman/Third Nephi number-term letter pattern (LKM[K]LMK) includes the K number-term in the title appositive of Third Nephi. The first (L) letter-set in the following proposed, balanced, and reversible (MKL)(K[M]K)(LKM) letter pattern, which occurs wholly within Third Nephi, includes all four L number-terms in 3 Nephi 2:5-8. These are the last number-terms in the 20 year-related expressions of the initial narrative group of Third Nephi. Neither of these lengthier letter patterns suggests an overriding structural influence on the use of number-terms in the initial narrative group of Third Nephi. Instead, the number-term placement patterns in the initial narrative group of Third Nephi seem to exist at a narrative level that overlaps parts of the underlying sixth and seventh number-term placement patterns in the plates of Mormon.[72]

The 60 potential Sets associated with the (K), (L), (M), and perhaps (P) letter-sets in the initial narrative group of Third Nephi also are listed together in Table 3.B. These Sets produce 98 alternative Set-sums, three unique Set-sum values, and 183 Set-contexts. When a number-term Set-sum duplicates a previous year-, time-, or number-term Set-sum, the associated Set-context or Set-contexts are noted in Table 3.B by the parenthetical "(see above)".

Eight (8.2%) of the 98 alternative Set-sums do not suggest any Set-context. Ninety-two (50.3%) of the 183 potential Set-contexts represent close accords. The other 91 potential Set-contexts (49.7%) represent near accords. Eight Set-contexts (4.4%) involve factors of single intervals and 175 (95.6%) involve one or more multiples of intervals or half intervals. Each of the three unique Set-sum values implies at least one close accord.

3.3.4 Set-contexts related to narrative-link letter-sets

Three analytical types of narrative-links occur with the first 20 year-related expressions of Third Nephi: prepositional or Q; verbal or R; and conjunctional or S. The (QRQRQRSR) letter pattern in these 20 expressions may seem to present (Q) and (S) letter-sets merely alternating with (R) narrative-link letter-sets in a variable sequence letter pattern; however, the narrative-link number pattern discussed in Section 3.2.4 above may suggest a more organized placement

[72] See Division 3, Part 1, Section 1.2.3.

pattern. If the four (AB) year-term letter-groups are used as a model, the letter pattern may be understood as four distinct letter-groups: (QR)(QR)(QR)(SR). Narrative-link letter patterns do not appear to have been separately organized throughout the plates of Mormon,[73] but in Part 2 of this Division, the suggestion was made regarding alternatively delimited narrative-links related to $Mormon_2$'s apparent purpose of honoring $Nephi_1$'s prophetic and record keeping legacy.[74] Thus, if the alternatively delimited narrative-link letter patterns associated with the Book of Mormon are prefigured by these Third Nephi narrative-links, then the placement pattern perhaps may be understood as two balanced and reversible (QR[Q]RQ)(RSR) letter-groups. The (QR)(QR)(QR)(SR) and (QR[Q]RQ)(RSR) letter-groups all are included in the Table 3.B analysis.

The 38 potential Sets associated with the (Q), (R), and (S) letter-sets and their related combinations in the initial narrative group of Third Nephi are listed together in Table 3.B. These Sets produce 57 alternative Set-sums, 25 unique Set-sum values, and 92 potential Set-contexts. If a narrative-link Set-sum duplicates a previous year-, time-, or number-term, or narrative-link Set-sum, the associated Set-context or Set-contexts are noted by the parenthetical "(see above)".

Twelve (21.1%) of the 57 alternative Set-sums do not suggest any Set-context. Fifty-two (56.5%) of the 92 potential Set-contexts represent close accords; the other 40 Set-contexts (43.5%) represent near accords. Three Set-contexts (3.3%) involve factors of single intervals; the other 89 (92.7%) involve one or more multiples of intervals or half intervals. Four (16.0%) of the 25 unique Set-sum values (185, 187, 277, and 1438) perhaps may be considered incidental to the proposed symbolism because they do not imply any close or near accord.

3.3.5 Set-contexts related to temporal-expression letter-sets

Four of the seven structural categories of formal expressions are represented in the first 20 temporal-expressions of Third Nephi: whole-year or *A*; commencement or *B*; pass-away or *D*; and it-was or *G*. In addition, four or five of the nine structural categories of informal expressions may be denoted in these 20 temporal-expressions: non-numbered or *H*; appended or *J*; referred-year-relation or *M*; referred-years-relation or *O*; and perhaps (depending on the categorization of the temporal-expression in the title appositive) stated-time-relation or *Q*. Because these eight or nine structural categories are interwoven in the initial 20 expressions, the letter pattern is unquestionably a variable sequence: (*A* or *Q*) *DGMBOMDAHDJD*. The formal expression letter pattern may be (*AD*)(*GB*)(*DAD*), (*AD*)(*GBD*)(*AD*), or perhaps (*D*)(*GB)(DAD*) or (*D*)(*GBD*)(*AD*). The informal expression letter pattern may be (*QM*)(*OMHJ*), (*Q*)(*MOM*)(*HJ*) or perhaps (*MOM*)(*HJ*). The 56 proposed Sets associated with these letter-sets and potential letter-groups in the initial narrative group of Third Nephi are listed together in Table 3.B. However, for comparison with temporal-expression structural categories in the other four narrative groups of Third Nephi, the analysis sorts these categories into formal and informal letter-sets.

The 32 potential formal Sets suggest 40 alternative Set-sums, 11 unique Set-sum values, and 94 potential Set-contexts. Eight (20.0%) of the 40 formal alternative Set-sums do not suggest any Set-context. Fifty-five (58.5%) of the 94 formal Set-contexts represent close accords; 39 more (41.5%) represent near accords. Seven of the 94 formal Set-contexts (7.4%) involve factors of single intervals; the other 87 (92.6%) involve one or more multiples of intervals or half intervals.

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[73] See Division 1, Part 5, Section 5.3.

[74] See Division 3, Part 2, Section 2.4.3.

Two (18.2%) of the 11 unique Set-sum values (186 and 1289) perhaps may be considered incidental to the proposed symbolism because they do not imply any close or near accord.

The 24 potential informal Sets imply 33 alternative Set-sums, five unique Set-sum values, and 29 potential Set-contexts. Fifteen (44.1%) of the 34 informal alternative Set-sums do not suggest any Set-context. Nineteen (65.5%) of the 29 Set-contexts represent close accords; the other ten (34.5%) represent near accords. Six of the 29 Set-contexts (20.7%) involve factors of single intervals; the other 23 (79.3%) involve one or more multiples of intervals or half intervals. Two (40.0%) of the five unique Set-sum values (93 and 386) perhaps may be considered incidental to the proposed symbolism because they do not imply any close or near accord.

3.3.6 Relaxed definition of a near accord

When all duplicate Set-sum values listed in Table 3.B are eliminated from consideration, just 140 unique Set-sum values remain. Twenty-eight (20.0%) of the 140 unique Set-sum values imply no Set-context. As in Part 2 of this Division, these 28 values were investigated with a relaxed definition of a near accord—one whole day less than the smaller near accord or more than the larger near accord. Consistent with the irregular orbits of the earth, moon, and planets, and with naked-eye observation of the heavens and careful record keeping, it was assumed that, at times, a recorded commensuration reasonably could be up two days shorter or longer than the natural days that represented close accords with the statistical mean. With that relaxation of the near accord definition, 16 (57.1%) of the 28 unique Set-sums that implied no Set-context became associated with 24 slightly longer or shorter astronomical intervals. When the relaxed definition of a near accord was applied to the other 112 unique Set-sums (the ones that already had been associated with Set-contexts under the more rigorous definitions of close and near accords), 42 (37.5%) of the 112 Set-sums implied 56 additional relaxed near accords. These 58 unique Set-sums and their 80 relaxed near accords all are listed in Table 3.B, where these commensurations are described either as longer near accords or shorter near accords.

3.3.7 Aggregate data for all potential Sets

The 250 potential Sets in Table 3.B result in 317 Set-sums that imply 703 Set-contexts and 70 Set-sums that do not imply any Set-context. These aggregate numbers include 205 duplicate Set-sums that imply 456 duplicate Set-contexts; they also include 42 duplicate Set-sums that do not imply any Set-context. When all duplicates are removed from the aggregate data, the 250 potential Sets result in 140 unique Set-sum values. Of this latter number, 28 do not imply any Set-context. The remaining 112 unique Set-sums imply all 247 potential Set-contexts listed as "factors of close accords", "close accords with intervals", or "near accords with intervals" in the Summary section of Table 3.B.

One hundred fifty-eight (64.0%) of the 247 Set-contexts are close accords and 89 (36.0%) are near accords. Sixteen (6.5%) of the 247 Set-contexts involve factors of single intervals, while 231 (93.5%) involve one or more multiples of intervals or half intervals. Of the 28 unique Set-sums that do not imply any Set-context, 16 do imply 24 of the relaxed near accords listed in Table 3.B. Forty-two of the 112 unique Set-sums that imply Set-contexts also imply another 56 of the relaxed near accords listed in the table. Thus, 128 (91.4%) of the 140 unique Set-sums imply 247 Set-contexts (158 close accords and 89 near accords) and 80 relaxed near accords. Table 3.C of this Division lists all 327 of these commensurations, together with their various interval lengths and the 12 unique Set-sums that do not imply any accord.

3.3.8 Lunar symbolism in the initial narrative group of Third Nephi

Draconic, sidereal, and synodic month intervals are implied by 69 close accords, 74 near accords, and 65 relaxed near accords listed in Table 3.C. These 208 accords represent 63.6% of the 327 total accords. These accords also suggest a detailed Nephite perception of lunar periods. The following list summarizes part of that understanding by comparing implied "Set-context" means with the modern estimates of these means. The implied close accords in this list are the five longest ones for each type of lunar month listed in Table 3.C.

Month type	Close accords	Implied mean	Modern mean	Difference
draconic	2449 or 2450 days	27.21667 days	27.21222 days	6.40 minutes
draconic	2367 or 2368 days	27.21264 days	27.21222 days	0.61 minutes
draconic	2272 or 2273 days	27.21557 days	27.21222 days	4.82 minutes
draconic	2258 or 2259 days	27.21084 days	27.21222 days	1.98 minutes
draconic	2163 or 2164 days	27.21384 days	27.21222 days	2.33 minutes
sidereal	2458 or 2459 days	27.31667 days	27.32166 days	7.19 minutes
sidereal	2349 or 2350 days	27.31977 days	27.32166 days	2.73 minutes
sidereal	2267 or 2268 days	27.31928 days	27.32166 days	3.43 minutes
sidereal	2254 or 2255 days	27.32727 days	27.32166 days	8.08 minutes
sidereal	2172 or 2173 days	27.32704 days	27.32166 days	7.75 minutes
synodic	2451 or 2452 days	29.53614 days	29.53059 days	8.00 minutes
synodic	2347 or 2348 days	29.52830 days	29.53059 days	3.29 minutes
synodic	2273 or 2274 days	29.52597 days	29.53059 days	6.65 minutes
synodic	1978 or 1979 days	29.52985 days	29.53059 days	1.06 minutes
synodic	1889 or 1890 days	29.52344 days	29.53059 days	10.30 minutes

Within a relatively short time, two of the draconic month intervals listed above seem likely to have been noticeably too long or too short. One measure is 2.33 minutes too long for each draconic month and the other is 1.98 minutes too short for each draconic month. A count of days that alternated the 2258/59-day measure with the 2163/64-day measure would produce a combined mean of about 27.21231 days for the draconic month, approximately 0.35 minutes longer than the modern estimate. This combined measure may have permitted relatively accurate predictions of a draconic month interval of 8844 days (about 24.214 tropical years).

Three of the implied means of the depicted sidereal month intervals are shorter than the modern mean. The other two have implied means that are longer than the modern mean. A count of days that alternated the 2458/59-day measure with the 2172/73-day measure would produce a combined mean of about 27.32153 days for the sidereal month, approximately 0.56 minutes longer than the modern estimate. This combined measure may have permitted relatively accurate predictions of a sidereal month interval of 9262 days (about 25.359 tropical years).

The implied means of two synodic month intervals listed above are about 8.00 minutes longer and about 6.65 minutes longer than the modern mean. A count of days that alternated the 2451/52-day measure with the 2273/74-day measure would produce a combined mean of about 29.53125 days for the synodic month, approximately 1.35 minutes longer than the modern mean. This combined measure may have permitted relatively accurate predictions of a synodic month interval of 9450 days (about 25.873 tropical years).

The sidereal and synodic month intervals of about 25.4 and 25.9 years described above could have permitted the priest-astronomers to predict the phase and position of the moon in a

precisely measured backdrop of the stars along the ecliptic. Similarly, the draconic and synodic month intervals of about 24.2 and 25.9 years described above could have permitted them to predict the nodal position and phase of the moon in such a backdrop of the stars. Whether they did so is not indicated by the foregoing limited lunar data associated with the Sets of the first 20 temporal-expressions in Third Nephi.

However, two issues related to these lunar accords must be noted. First, no close, near, or relaxed near accords are related to the 365-day year, but two close accords, three near accords, and three relaxed near accords relate to draconic or eclipse year intervals. Furthermore, three close accords, two near accords, and one relaxed near accord are related to 6-synodic month intervals, and two close accords and one near accord relate to a 12-synodic month year. Three close accords and two near accords are related to 18-synodic month years. The 6-, 12-, and 18-synodic month periods also could have been associated with eclipse recording and/or prediction.[75]

The second issue stems from the textual limitation of 20 temporal expressions. By definition, none of the proposed year-, time-, or number-term, narrative-link, or temporal-expression Sets is complete for Third Nephi. The initial narrative group of Third Nephi appears to create a distinctive collection of 20 temporal-expressions with a narrative emphasis rather than an emphasis on analytical types or structural categories. The point of view of these year-related narratives concentrates on the termination of the proposed lunar eras and their interlocking calendars, and the inauguration of a single new era that is proposed to have used a solar based calendar. With the lunar symbolism of each type of month as an interpretative foundation, the lunar and solar calendrical symbolism implied by these 20 temporal-expressions will now be analyzed.

3.4 Calendrical Set-context symbolism in the 20 temporal-expressions

According to Mormon_2's statements, the Lehi era context began when Lehi_1 left Jerusalem in the first year of the reign of Judah's king Zedekiah. This era context apparently ended less than a year after the 609th Lehi calendar year had passed away.[76] Perhaps there was no further need for the Lehi calendar. Similarly, the Judges era context began when the Nephite king Mosiah_2 inaugurated the reign of the judges and it apparently ended less than a year after the 100th Judges calendar year had come to an end.[77] Still, some Nephites continued to reject the sign of the night without darkness and the reign of the Judges continued into the 30th NC calendar year. Furthermore, there may have been a continuing need to measure eclipse seasons. Thus, lunar observation and record keeping may have continued beyond the formal counting of Lehi calendar years and Judges calendar years.

The interlocking or interwoven nature of the two earlier calendars appears to be symbolized by the first four temporal-expressions and by the 17th and 18th temporal-expressions in Third Nephi. In the first four temporal-expressions, the expression order relates first to the Lehi era, then to the Judges era, then back to the Lehi era, and finally to the Judges era again. In the 17th and 18th temporal-expressions, the order is reversed, apparently to document that the first Judges

[75] See Division 2, Part 3, Sections 3.8.3-3.8.4.

[76] 3 Nephi preface; 2:6.

[77] Mosiah 29:37-46; 3 Nephi 2:5.

calendar year started before the end of the 509th Lehi calendar year and that the two calendars maintained their interlocked relationship through the end of the 609th Lehi calendar year.[78]

The repetition of the interwoven pattern in the first four temporal-expressions may be extended to include all 19 temporal-expressions that state or refer to the closing years of these two overlapping era contexts. As a result of such an interweaving, two Sets of number-terms may be proposed. Their respective number-terms, values, and Set-sums are illustrated as follows.

Lehi era context: 1+600+92+[□ or 92]+93+ □ +96+98+100+9 = 1089 or [1181][79]

Judges era context: 91+[□ or 92]+ □ +92+94+95+97+99+609 = 1177 or [1269][80]

In these Sets, a non-quantified interpretation of a referenced number-term and a non-quantifiable number-term both are signified by a square box. Brackets are placed around the alternative interpretations of a referenced number-term and around a Set-sum that includes a quantified referenced number-term. The alternating order of number-terms places the first number 9 (from the 19th number-term) in the Lehi era Set. The number 9 associated with the 20th number-term does not appear in either of the Sets illustrated above because the "nine years" of the 20th expression are the reckoned years of the NC era context. Sometime in the 610th Judges calendar year and in the 101st Lehi calendar year, exactly nine NC calendar years measured from the Messiah's birth date came to an end. At that time or shortly thereafter when the associated reckoning had been finalized and the event had been prepared, the NC era appears to have been officially inaugurated to honor the long expected birth date and to ensure its celebration on every NC calendar New Year.

3.4.1 Lunar calendar Set-contexts and their accords

If the referenced number-terms in the two illustrated Sets are not quantified, their respective Set-sums are 1089 and 1177. The total Set-sum for the 19 number-terms is 2266.

> The Set-sum 1089 implies close accords with the lengths of 121 9-day cycles and 40 mean draconic months (about 1088.4888 days).
>
> The Set-sum 1177 suggests a relaxed or longer near accord with the length of 43 mean sidereal months (about 1174.8314 days).
>
> The Set-sum 2266 suggests a near accord with the length of 83 mean sidereal months (about 2267.6978 days) and a relaxed or shorter near accord with the length of six mean synodic periods of Saturn (about 2268.5525 days). An interval of 2266 days is 13 days more than the length of 6.5 mean draconic years (about 2253.0305 days); so, a 2266th day counted from the sun's nodal position on the ecliptic would have occurred near the end of an eclipse season (about 2235.8 days to 2270.3 days) related to the sun's nodal position 6.5 draconic years later.

When the referenced number-terms are quantified, the two illustrated Set-sums are 1181 and 1269. The total Set-sum for the 19 number-terms is 2450.

> The Set-sum 1181 implies a close accord with the length of 40 mean synodic months (about 1181.2235 days).

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[78] See Division 1, Part 3, Sections 3.7.5 and 3.9; Division 2, Part 2, Sections 2.2-2.3, 2.5.4, 2.5.8.

[79] 3 Nephi preface, 1:1, 4, 25, 27, 29; 2:4, 5, 7.

[80] 3 Nephi 1:1, 18, 26, 28; 2:1, 4, 6.

> The Set-sum 1269 suggests close accords with the lengths of 141 9-day cycles and 43 mean synodic months (about 1269.8153 days) and a near accord with the length of 46.5 mean sidereal months (about 1270.4572 days).
>
> The Set-sum 2450 implies close accords with the lengths of 350 7-day weeks and 90 mean draconic months (about 2449.0998 days), and a near accord with the length of 83 mean synodic months (about 2451.0388 days). A Set-context of 2450 days also suggests a close accord with the interval of six Mesoamerican solar calendar years (6x365 days = 2190 days) plus a single Mesoamerican ritual almanac (2190+260 = 2450).

The number repetitions in these accords are intriguing: 40 draconic months and 40 synodic months; 43 sidereal months and 43 synodic months; and 83 sidereal months and 83 synodic months. The smallest and largest of the four individual Set-sums (1089 and 1269) both suggest the measurement of 9-day cycles. Moreover, the separation between the two Set-sums that imply 9-day cycles is equal to 180 days (1269-1089 = 20x9). An interval of nine 20-day cycles includes an eclipse-related half-draconic year (about 173.3100 days) and is exactly one-half of a 360-day Long Count tun. The smallest and largest Set-sums (1089 and 2450) both imply close accords with draconic month intervals. The two combined Set-sums (2266 and 2450) suggest the measurement of draconic years and months, both of which could be used to predict solar and lunar eclipses. The number repetitions, the 180-day separation of two numbers, the symbolic 9-day counts, and the eclipse connotations all appear to have been carefully planned.

A crucial detail of the illustrated Lehi and Judges era Sets must be noted. In each Set, the 92nd calendar year is mentioned once and referenced once. The "commencement" of the 92nd Judges calendar year is the interval in which the prophesied signs of the Messiah's birth were observed; so, it is understandable that this year has been emphasized by repetition in both Sets. In the Lehi era Set, the number 1 (from the number-term "the first" in the title appositive) is crucial to the equations adding to the Set-sums 1089 and 1181 and to their close accords with 121 9-day cycles, 40 mean draconic months, and 40 mean synodic months. Of course, if the number 1 were not part of the Lehi era Set, its Set-sums 1089 and 1181 could have been obtained by duplicating one of the other number-terms in the Judges era Set. For example, if the writer were to copy the 97 in the Judges era Set and place it into the Lehi era Set in substitution for the 96 which appears there, the Set-sums 1089 and 1181 could be obtained. However, the duplication of 97 would have accentuated a year other than the 92nd Judges calendar year. Presumably, only the 92nd year was to be emphasized. It seems reasonable to conclude that for a variety of arithmetic, structural, and symbolic purposes, the planning of the proposed Sets in the initial narrative group of Third Nephi was aided by the decision to include the number-term "the first" in the title appositive of Third Nephi.

The largest Set-sum of the Lehi era Set (1181) implies a close accord with a count of 40 mean synodic months and the largest Set-sum of the Judges era Set (1269) suggests a close accord with a count of 43 mean synodic months. An interval of (40+43) or 83 mean synodic months is about 2451.0388 days, an interval that is a whole day more than the aggregate Set-context of (1181+1269) or 2450 days. Thus, while the mean lengths of 83 synodic months and 90 draconic months are nearly the same, they differ by about 1.94 days.

3.4.2 Nine 12-month calendar years

The Lehi era has been defined by the texts, chronological structure, and symbolism discussed in Divisions 1 and 2 of this source book. The first day of the era occurred when "Lehi left Jerusalem". Three overlapping intervals were proposed as the measurement tools initially used by $Lehi_1$ and his descendants to describe the passage of time: whole days, 7-day weeks, and observed synodic months that were grouped into 6-month lunar semesters and 12-month lunar years. In the course of the trek of $Lehi_1$ and his followers through the Arabian Peninsula and their voyage to the New World, they may have become increasingly familiar with sidereal months and they may have experienced an occasional eclipse. In their New World environment, the Nephites appear to have developed and supported an "holy order"[81] of dedicated priest-astronomers and record keepers and to have used all the available local structures, tools, and expertise for tracking the passage of time and ensuring their agricultural success.[82] During the 610th Lehi calendar year, the Nephite faithful and the converted Lamanites who lived in their lands apparently gave up the Lehi era because its most important purpose (the measurement of $Lehi_1$'s 600-year prophecy) had been fulfilled.

Thus, when $Mormon_2$ described "nine years" in 3 Nephi 2:7, he honored all the ancient Messianic prophets (including his own ancestors) by noting that those years "had passed away from the time which the sign was given which was spoken of by the prophets that Christ should come into the world". The expectations of "a great many thousand years" had not been in vain.[83] In using this longest time-term in the *Book of Mormon*, $Mormon_2$ also honored the pre-mortal being envisioned by $Lehi_1$, the "one" in the "numberless concourses of angels" whose "luster was above that of the sun at noonday", who left his place by the throne of God and called $Lehi_1$ to prophesy of his coming, and who had at long last taken on the experiences of a human body.[84]

Based on the proposed length of 12 mean synodic months for each Lehi calendar year, an interval of nine lunar years is about 3189.3035 days. This interval is equivalent to 18 6-month lunar semesters and six 18-month lunar years. Again, a lunar connection with eclipse seasons, at least as tracked in Mesoamerica,[85] may be suggested. A 3189-day interval also implies a relaxed or shorter near accord with the length of eight mean synodic periods of Jupiter (about 3191.0737 days) and a relaxed or longer near accord with the length of 27.5 mean synodic periods of Mercury (about 3186.6324 days). Thus, the observation of two planetary synodic periods could be compared with lunar observations and the counts of 6-month semesters and 12- and 18-month years to verify that the count of nine 12-month years or 108 synodic months had been accurate. The apparently coordinated observations and record keeping also may imply the existence of, and community support for, an organization of specialized priest-astronomers with established points of observation, scribal expertise and materials, and sheltered places that were reserved and guarded for the creation, protection, and study of detailed astronomical and historical records.

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[81] E.g., 2 Nephi 5:26; 6:2; Jacob 1:18; Jarom 1:11; Mosiah 6:3; Alma 4:20; 8:4; 13:1, 6, 8, 10-11, 18; Ether 12:10.

[82] 2 Nephi 5:7-13.

[83] Helaman 8:18.

[84] 1 Nephi 1:4-15; 3 Nephi 1:12-21.

[85] See Division 2, Part 2, Sections 2.5.8 and 2.5.9; Part 3, Section 3.8.3.

3.4.3 Nine (365-day) solar calendar years

The NC era has been defined by the texts, chronological structure, and symbolism discussed in Divisions 1 and 2 of this source book. In Part 2 of this Division 3, the previous discussions regarding the length and composition of the NC calendar year were summarized.[86] Third Nephi makes it clear that the first day of the era began when the night without darkness ended and the sun rose in the east to signify "the coming of Christ".[87] The Nephites apparently continued to use the measurement tools initially used by $Lehi_1$ and his descendants to describe the passage of time: whole days, 7-day weeks, and observed synodic months. However, as the symbolic temporal discourse associated with $Mormon_2$'s personal book also makes clear, the Nephites monitored and carefully recorded the sidereal and draconic months of the moon, the draconic or eclipse year of the sun, and the sidereal and synodic periods of the five planets visible to unaided observation.[88] All this evidence suggests a solar-based NC calendar that was composed in a manner similar to the ancient and accurately maintained solar calendars of Mesoamerica.

The NC era and its 365-day calendar had a unique inauguration date, which 3 Nephi 2:8 describes as having been measured "from this period which the sign was given, or from the coming of Christ". This unique time-term conjoins two descriptions, precedes its year-term, and refers to a "period which the sign was given". The night without darkness, as part of the "period" of that singular "sign", occurred before the day of "the coming of Christ". The rising of the sun on the day of "the coming" also signified the birth. In the dark of one of the nights that followed the Messiah's birth, "a new star did appear, according to the word".[89] Thus, the sun in the morning of a new day and a new star among all the other stars are expressly mentioned as signifying "the coming of Christ". The moon is not expressly mentioned in $Mormon_2$'s report of the sign, but this study proposes that it is symbolized by the 19 temporal-expressions in Third Nephi that precede the inauguration of the NC era. That is, the sun, moon, and new star all could be considered elements of the singular "period" of the "sign".

An interval of nine (365-day) calendar years is 3285 days, about 96 days longer than nine 12-month lunar calendar years. The additional length of this nine-year period is consistent with the description in Third Nephi of the end of nine Judges and Lehi calendar years before the end of nine NC calendar years.[90] Nevertheless, the largest Set-contexts of the 19 number-terms that precede the NC era inauguration are neither the 3285 days of a solar era, nor the 3189 or 3190 days of a lunar era. The largest Set-contexts are 2450 and 2266 days. The close, near, and relaxed near accords apparently symbolized by these Set-contexts have been noted above in Section 3.4.1. Do these Set-contexts symbolize anything else? Yes.

3.5 Symbolizing the Messiah's birth date in Third Nephi

Section 3.2 of this Part introduced the number pattern symbolism of the 20 temporal-expressions in the initial narrative group of Third Nephi. The proposed symbolism included that of the human body and its 20 digits, together with human pregnancies, births, and deaths that may have been associated with the numbers 9, 13, and 20. That Section also proposed the

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[86] See Division 3, Part 2, Section 2.6.5.

[87] 3 Nephi 1:19; 2:8.

[88] See Division 3, Part 2, Section 2.7 and Tables 2.F-2.O.

[89] 3 Nephi 1:15-21; 2:8.

[90] 3 Nephi 2:5-7.

structural interweaving of the numbers 7, 13, and 20, which appeared to symbolize the Mesoamerican 260-day calendar and the Nephite 7-day week with its sacred seventh day. The structural number patterns also suggested the "seating" and counting of 20-day and 5-day months in a Mesoamerican (365-day) solar calendar and the separate positional values and counting of a 20-day *winal* in the 360-day *tun* of the Long Count. Finally, the symbolic connection between the number 20 and the moon, and some of the questions arising from $Mormon_2$'s choice not to expressly mention the moon were noted—but not answered. This Section 3.5 suggests potential answers related to the sun, moon, and new star.

Section 3.3 focused on Sets of number-terms governed by the diction and placement of the year-related expressions and their narrative-links. As in the small plates of Nephi and the plates of Mormon previously examined, the Set-sums and their close, near, and relaxed near accords with calendrical and astronomical intervals of whole days were introduced. The proposed symbolism suggested a Nephite society dedicated to naked-eye astronomy, record keeping, and prophetic thinking that extended from the fifth century BCE into the fourth century CE. Section 3.3 also noted the emphasis on lunar and eclipse accords and then Section 3.4 extended that emphasis into Sets associated with the Lehi and Judges era contexts. The interlocking lunar calendars of those eras brought the Nephites to a point where the NC calendar could be inaugurated to supersede the earlier lunar calendars.

3.5.1 The 2450-day Set-context in a Mesoamerican setting

This Section takes up the proposal in Section 3.4.1 above that a Set-context of 2450 days may symbolize an interval of six Mesoamerican solar calendar years (6x365 days = 2190 days) plus a single Mesoamerican ritual almanac (2190+260 = 2450). This Section also examines the proposal in Section 2.6.5 of Part 2 of this Division that, in addition to whatever political, ritual, and other societal steps were necessary to establish a new calendar among the Nephites, the reckoning process would seem to have involved at least two separate kinds of comparisons. First, Nephite priest-astronomers in a New World setting may have coordinated their accounts of the Messiah's birth date, as recorded in the Lehi era and Judges era lunar calendars, with a specific date in at least one pre-existing 365-day calendar. In Mesoamerica, solar based calendars appear to have been in use for hundreds of years before the identified birth date; however, Nephite coordination with any such calendar may not have been a straightforward matter. The occurrence of a night without darkness was immediately disputed among the Nephites.[91] As a result, the design of a new calendar based on the existence of a night without darkness could have introduced a full day's error into the count of days—not only in the solar calendar, but in the 260-day calendar as well. The possibility of such an error had to be addressed in a way that was convincing to the priest-astronomers and Nephite leaders. The priest-astronomers seem likely to have gathered evidence for and against the miraculous night and, based on that evidence, $Nephi_3$, the Nephites' new official record keeper, apparently determined that the night had, in fact, occurred.[92] This Section suggests some of the evidence that may have been considered during the apparently lengthy reckoning process.

Second, Nephite priest-astronomers probably felt some constraint to design their new solar based calendar within the ancient traditions of the pre-existing calendrical systems for accurately predicting, observing, and recording a solar era. Those traditions would have suggested 20 sacred

[91] 3 Nephi 1:16-22.

[92] 3 Nephi 8:1-2.

days because the birth involved a baby with 20 fingers and toes like almost all other human beings. The year would include 18 20-day months. The number 18 is a multiple of nine, perhaps suggesting the nine lords of the night and the underworld. The baby would not be an immortal but would be subject to death. However, as the Messiah, this human being would be blessed by Deity to overcome death, be resurrected, and appear again within a five-day period, as foretold by prophets recorded in the brass plates: Zenoch, Neum, and Zenos.[93] Thus, a new solar calendar could be composed of 18 20-day months, together with a 19th month of five days. A new solar calendar, originating on the Messiah's birth date, could be entirely symbolic of the Messiah's descent from heaven, mortality, day of death, three-day entombment, and day of resurrection. This would seem to have been a distinctive and instructive symbolic pattern for a new solar calendar in a society concerned with Messianic prophecies and signs.

The Mesoamerican system of solar-based calendars included two that reached major milestones in 1 and 2 CE, which likely preceded the inauguration of the NC calendar, and two more calendars that reached additional milestones in 5 and 6 CE, which may have preceded, followed, or been used for the inauguration of the NC calendar. Three of these calendars were terminally named summer era calendars and the fourth was an initially named spring era calendar, all of which appear to have been observed, measured, and recorded for more than four centuries before the Messiah's birth date.

> *The Cuicuilco calendar.* The first of these four calendars to be inaugurated was provisionally named the "Cuicuilco" calendar by Munro Edmonson. The date of its proposed inauguration was the summer solstice in 739 BCE. Its New Year was Type I (Sun, Death, Monkey, or Owl?). Because this calendar was terminally named, the year bearers were Type V (Serpent, Foot, Eagle, or Lord).[94] The Cuicuilco calendar's 743-year summer era could have been confirmed by observation at the time of the summer solstice in 5 CE, on a day when a 180-day misalignment could have been measured between the calendar count of 743 365-day years (271195 days) and 743 tropical years (271374.9457 days).
>
> *The Olmec calendar*. The second summer era, terminally named calendar apparently inaugurated was provisionally named the "Olmec" calendar and its proposed inauguration date was 40 days before the summer solstice in 656 BCE. Its New Year also was Type I and its year bearers were Type V.[95] The Olmec calendar's 661-year summer era could have been confirmed by observation at the time of the summer solstice in 6 CE, on a day when a 160-day misalignment could have been measured between the calendar count of 661 365-day years (241265 days) and 661 tropical years (241425.0863 days).
>
> *The Izapa calendar*. The third summer era calendar was provisionally named the "Izapa" calendar. It appears to have been inaugurated in 520 BCE and its first summer solstice occurred 52 days later. Its New Year was Type II (Wind, Deer, Jaw, or Quake) and, because it was also terminally named, the year bearers were Type I (Sun Death, Monkey, or Owl?).[96] The Izapa calendar's 520-year summer era could have been confirmed by observation at the time of the summer solstice

[93] 1 Nephi 19:6-21.

[94] See Division 2, Part 3, Section 3.10.3-3.10.4.

[95] See Division 2, Part 3, Section 3.10.5.

[96] See Division 2, Part 3, Section 3.10.6.

in 1 CE, on a day when a 126-day misalignment could have been measured between the calendar count of 520 365-day years (189800 days) and 520 tropical years (189925.9378 days).

The Kaminaljuyu calendar. The original spring-era calendar was provisionally named the "Kaminaljuyu" calendar and it appears to have been inaugurated on the spring equinox in 433 BCE. Because it was an initially named calendar, its New Year and year bearers all were Type II (Wind, Deer, Jaw, or Quake).[97] The Kaminaljuyu calendar's 434-year spring era could have been confirmed by observation at the time of the spring equinox in 2 CE, on a day when a 105-day misalignment occurred between the calendar count of 434 365-day years (158410 days) and 434 tropical years (158515.1096 days).

The dates of the four proposed solar events noted above are listed in Figures 2.1 through 2.4 in Part 2 of this Division. Each of these figures depicts a Mesoamerican (365-day) calendar year in which the confirmation of a particular solar era may have been obtained by careful prediction, observation, and record keeping. The Mesoamerican calendar dates also are expressed in terms of a Gregorian proleptic calendar and a Julian day number. In sequential order, these four calendar dates on which the predicted misalignments could have been confirmed are as follows.

22 June 1 CE 1 Eagle [18 K Izapa = 3 L or K'ayab' Tikal] (1721598): Izapa era
21 March 2 CE 13 Deer [5 G Kaminaljuyu = 10 G or Kej Tikal] (1721870): Kaminaljuyu era
22 June 5 CE 6 Owl? [0 L Cuicuilco = 4 L or K'ayab' Tikal] (1723059): Cuicuilco era
22 June 6 CE 7 Sun [0 L Olmec = 4 L or K'ayab' Tikal] (1723424): Olmec era

To analyze the possible meanings of the Set-context of 2450 days around the time of the birth date of the Messiah or the time of the official inauguration of the NC era, this study examined the two proposed calendrical components symbolized by the Set-context (2190 and 260 days) and the full period of 2450 days in relation to the foregoing misalignment dates. This was a limited examination that focused solely on the four proposed solar event days listed above. Using their respective Julian day numbers, additional dates were determined as follows: 1721598 ± 2190, 260, and 2450; 1721870 ± 2190, 260, and 2450; 1723059 ± 2190, 260, and 2450; and 1723424 ± 2190, 260, and 2450. Twenty-four dates related to the four proposed misalignment dates were identified, ranging from 7 BCE to 13 CE. All 28 dates are listed in Table 3.D of this Division. This limited examination provided a single perspective on the information that could be associated with the 2450-day Set-context in Third Nephi and its implied calendrical components, when viewed within a Mesoamerican calendrical context.

The examination then was expanded to include 30 New Year dates and 30 year bearer dates of the Cuicuilco, Olmec, and Izapa calendars, and 30 New Year/year bearer dates of the Kaminaljuyu calendar during the 30 Gregorian proleptic calendar years from 15 BCE through 15 CE. Dates outside the 15 BCE-15 CE range were disregarded because they were deemed unlikely to be related to the Messiah's birth date.[98] Using both astronomical and confirmation dates for each solar event, the 30 spring equinoxes and 30 summer solstices within the 15 BCE-15 CE range also were examined.[99] This part of the analysis necessarily included the four misalignment dates listed above and their 24 related dates. A Julian day number was identified for each of these calendrical and solar event dates.

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[97] See Division 2, Part 3, Section 3.10.7.

[98] According to Matthew 2:1, Jesus was born during the reign of Herod the Great (usually considered 37-4 BCE). Dionysius Exiguus, who lived in the sixth century CE, placed the birth about 1 CE. Hastings, ed., *Dictionary of the Bible*, 378-79 (Herod), 477-79 (Jesus Christ).

[99] See Division 2, Part 3, Section 3.10.1 and Division 3, Part 2, Section 2.6.5.

The solar event calculation program provided by the Goddard Institute for Space Studies ("GISS") on the NASA website was used to calculate the astronomical spring equinox and astronomical summer solstice in each year of the 15 BCE-15 CE range. When the calculated times of the astronomical spring equinoxes were converted from Greenwich Mean Time ("GMT") into Central Standard Time ("CST") to represent the approximate time in Mesoamerica, 29 of the 30 astronomical spring equinoxes occurred on 20 March in these years. The one exception occurred at 11:20 pm CST on 19 March 12 CE. Given the approximately 3-hour potential margin of error in the program's calculations, this exception was deemed immaterial to the observational and/or calendar confirmation of the spring equinox; so, 20 March was also the date used for the astronomical spring equinox in 12 CE. In the Kaminaljuyu calendar, the predicted 21 March date for observational confirmation also may have been used for all 30 years.

When the calculated times of the astronomical summer solstices were converted from GMT into CST to represent the approximate time in Mesoamerica, 27 of the 30 astronomical summer solstices occurred on 22 June in these years. The three exceptions occurred on 21 June in 4, 8, and 12 CE. In each of these years, this solar event was calculated to occur between 10 pm and midnight CST. These exceptions also were deemed immaterial to the observational and/or calendar confirmations; so, 22 June was used uniformly for the astronomical summer solstices in all 30 years. The three summer solstice calendars seemed to identify 22 June as the predicted date of the astronomical summer solstice rather than 23 June, when observational confirmation may have been more certain. The reason for this apparent difference in the spring and summer eras is unclear, but may be related to the earlier consistent observation of the summer solstice and/or to different observational protocols used by priest-astronomers in confirming these equinoxes and solstices.

Additional potentially meaningful dates were determined as follows: New Year date ± 2190, 260, and 2450; year bearer date ± 2190, 260, and 2450; spring equinox related date ± 2190, 260, and 2450; and summer solstice related date ± 2190, 260, and 2450. Linked dates outside the 15 BCE-15 CE limits were disregarded. Of course, each New Year or year bearer date was linked to other similar calendrical dates simply by the addition or subtraction of 2190 days, the equivalent of six (365-day) calendar years. The following dates are examples of linked New Year and year bearer dates within the 30-year period from 1 January 15 BCE (1715947) through 31 December 15 CE (1726903).

Cuicuilco New Year dates			
27 December 6 BCE	12 Monkey	0 C Cuicuilco = 4 C or Mol Tikal	1719594
			+ 2190
25 December 1 CE	5 Sun	0 C Cuicuilco = 4 C or Mol Tikal	1721784
Izapa year bearer dates			
19 December 4 CE	3 Monkey	19 B Izapa = 19 B or Yaxk'in Tikal	1722874
			– 2190
21 December 3 BCE	10 Sun	19 B Izapa = 19 B or Yaxk'in Tikal	1720684

Astronomical spring equinox dates were linked with similar succeeding dates six years later by intervals of 2191 or 2192 days because of the misalignment of the tropical year with the 365-day calendar year. The same 2191- or 2192-day links occurred with succeeding spring equinox confirmation dates, astronomical summer solstice dates, and summer solstice confirmation dates. However, during the progressing misalignments of the 15 BCE – 15 CE interval, 2190-day links occurred between confirmation dates and astronomical dates in the alternating patterns depicted

below. The represented dates include the astronomical spring equinox ("SEA") and its assumed confirmation date ("SEC") and the astronomical summer solstice ("SSA") and its assumed confirmation date ("SSC").

Connection	Link	Connection	Link
SEC (15 BCE) – SEA (9 BCE)	2191 days	SSC (15 BCE) – SSA (9 BCE)	2191 days
SEC (14 BCE) – SEA (8 BCE)	2191 days	SSC (14 BCE) – SSA (8 BCE)	2191 days
SEC (13 BCE) – SEA (7 BCE)	2190 days	SSC (13 BCE) – SSA (7 BCE)	2190 days
SEC (12 BCE) – SEA (6 BCE)	2190 days	SSC (12 BCE) – SSA (6 BCE)	2190 days
SEC (11 BCE) – SEA (5 BCE)	2191 days	SSC (11 BCE) – SSA (5 BCE)	2191 days
SEC (10 BCE) – SEA (4 BCE)	2191 days	SSC (10 BCE) – SSA (4 BCE)	2191 days
SEC (9 BCE) – SEA (3 BCE)	2190 days	SSC (9 BCE) – SSA (3 BCE)	2190 days
SEC (8 BCE) – SEA (2 BCE)	2190 days	SSC (8 BCE) – SSA (2 BCE)	2190 days
SEC (7 BCE) – SEA (1 BCE)	2191 days	SSC (7 BCE) – SSA (1 BCE)	2191 days
SEC (6 BCE) – SEA (1 CE)	2191 days	SSC (6 BCE) – SSA (1 CE)	2191 days
SEC (5 BCE) – SEA (2 CE)	2190 days	SSC (5 BCE) – SSA (2 CE)	2190 days
SEC (4 BCE) – SEA (3 CE)	2190 days	SSC (4 BCE) – SSA (3 CE)	2190 days
SEC (3 BCE) – SEA (4 CE)	2191 days	SSC (3 BCE) – SSA (4 CE)	2191 days
SEC (2 BCE) – SEA (5 CE)	2191 days	SSC (2 BCE) – SSA (5 CE)	2191 days
SEC (1 BCE) – SEA (6 CE)	2190 days	SSC (1 BCE) – SSA (6 CE)	2190 days
SEC (1 CE) – SEA (7 CE)	2190 days	SSC (1 CE) – SSA (7 CE)	2190 days
SEC (2 CE) – SEA (8 CE)	2191 days	SSC (2 CE) – SSA (8 CE)	2191 days
SEC (3 CE) – SEA (9 CE)	2191 days	SSC (3 CE) – SSA (9 CE)	2191 days
SEC (4 CE) – SEA (10 CE)	2190 days	SSC (4 CE) – SSA (10 CE)	2190 days
SEC (5 CE) – SEA (11 CE)	2190 days	SSC (5 CE) – SSA (11 CE)	2190 days
SEC (6 CE) – SEA (12 CE)	2191 days	SSC (6 CE) – SSA (12 CE)	2191 days
SEC (7 CE) – SEA (13 CE)	2191 days	SSC (7 CE) – SSA (13 CE)	2191 days
SEC (8 CE) – SEA (14 CE)	2190 days	SSC (8 CE) – SSA (14 CE)	2190 days
SEC (9 CE) – SEA (15 CE)	2190 days	SSC (9 CE) – SSA (15 CE)	2190 days

The dates linked by 2190 days from New Year to New Year or from year bearer to year-bearer and from SEC to SEA or from SSC to SSA did not appear to provide important information by themselves because they were merely the result of the lockstep nature of the 365-day calendars. However, when the dates related to solar events were included in the analysis by relating them to New Year dates, 44 New Year dates were linked to the date of the astronomical spring equinox and/or the spring equinox confirmation date in the same calendar year (a 260-day link) or in a previous or later calendar year (a 2450-day link). Only New Year dates in Olmec and Kaminaljuyu calendar years exhibited these spring equinox related connections and they occurred only between the spring equinox on 21 March 5 BCE (1719679) and the Kaminaljuyu New Year on 3 December 13 CE (1726145). The date ranges for these various links are set forth below.

260-day or 2450-day links	Year	Start date	Year	End date
SEC/Olmec New Year	5 BCE	1719679	5 CE	1723224
SEA/Olmec New Year	1 BCE	1721139	9 CE	1724684
SEC/Kaminaljuyu New Year	1 BCE	1721140	9 CE	1724685
SEA/Kaminaljuyu New Year	4 CE	1722600	13 CE	1726145

No similar connections or links occurred with any date related to a summer solstice, New Year date of a Cuicuilco or Izapa calendar, or year bearer date of any of the three terminally named calendars. Table 3.E depicts each of the 44 spring equinox/New Year links. Three dates in

Table 3.D appear in Table 3.E: 21 March 2 CE (spring equinox confirmation); 6 December 2 CE (spring equinox confirmation 2 CE+260 days); and 4 December 8 CE (spring equinox confirmation 2 CE+2450 days). These dates appear to be related to the 2 CE confirmation of a 105-day misalignment of the Kaminaljuyu calendar's New Year and the tropical year. The identified dates in the 15 BCE-15 CE range seemed to establish a set of working dates in which both key NC era dates (birth date and inauguration date) may have occurred. This expanded analysis provided a second, more comprehensive view of the potential meanings of the 2450-day Set-context in Third Nephi.

3.5.2 The 2266-day Set-context in a Mesoamerican setting

Quite a different perspective on the 15 BCE-15 CE range of dates was suggested by the Set-sum 2266. As noted in Section 3.4.1 above, when the two referenced number-terms in the initial narrative group of Third Nephi are not quantified, the total Set-sum for the 19 number-terms that precede the inauguration is 2266. A Set-context of 2266 days is 13 days more than the length of 6.5 mean draconic years (about 2253.0305 days). A 2266th day counted from a lunar eclipse may have occurred in an eclipse season (about 2235.8 days to 2270.3 days) related to a solar eclipse. Similarly, a 2266th day counted from a solar eclipse may have occurred in an eclipse season related to a lunar eclipse.

Section 2.7.9 and Tables 2.L and 2.N in Part 2 of this Division discuss and depict an extensive symbolic catalogue of eclipse related information associated with temporal-expressions in the Book of Mormon. That data includes the Set-context of 2251 days as a representation of a shorter near accord with the length of 6.5 mean draconic years. The Set-contexts of 2251 days and 2266 days are 15 days apart, perhaps suggesting that eclipses in the same eclipse season may occur about 15 days apart. Two eclipse seasons that are 6.5 draconic years apart may be associated with the following synodic and draconic month intervals (which are not listed in Part 2 of this Division).

2266-21 days = 2245 days

76 synodic months (about 2244.3248 days)
82.5 draconic months (about 2245.0082 days)

2266-7 days = 2259 days

76.5 synodic months (about 2259.0901 days)
83 draconic months (about 2258.6143 days)

While the 2245- and 2259-day intervals and their close accords listed above are not as obvious in a calendrical sense as the Set-sum 2450, these intervals may suggest the possibility that the Set-sum 2266 represents information about two eclipse seasons and solar and/or lunar eclipses that occurred about 6.5 draconic years apart. This possibility also was investigated for the dates between 1 January 15 BCE and 31 December 15 CE. The predicted data for eclipses during those 30 years were obtained from the NASA website.[100] Within the 30-year interval, 75 solar eclipses and 75 lunar eclipses are predicted to have occurred and been visible somewhere on earth. Whether humans were in all locations where eclipses may have been visible is doubtful, e.g., a partial solar eclipse is predicted to have been visible from Antarctica and the South Pacific

[100] The "Eclipse Predictions by Fred Espenak and Jean Meeus (NASA's GSFC)", *Five Millennium Catalog of Lunar Eclipses: -1999 to +3000 (2000 BCE to 3000 CE)* and *Five Millennium Catalog of Solar Eclipses: -1999 to +3000 (2000 BCE to 3000 CE)*, were accessed at eclipse.gsfc.nasa.gov/LEcat5/LE-0099-0000.html and LE0001-0100.html and at eclipse.gsfc.nasa.gov/SEcat5/SE-0099-0000.html and SE0001-0100.html.

Ocean or Southern Ocean near Antarctica on 24 December 2 BCE (1721052). It seems improbable that anyone was in that region during the southern hemisphere summer of 2 BCE.

The date 24 December 2 BCE is a Gregorian proleptic calendar date. In this study, the dates in the western calendar are Gregorian or Gregorian proleptic calendar dates, unless specifically identified as Julian or proleptic Julian calendar dates. On the NASA website, the date of this 2 BCE solar eclipse is 26 December because all dates in the eclipse catalogues prior to the first day of the Gregorian calendar (15 October 1582 CE) are given in a Julian or proleptic Julian calendar. Table 3.F of this Division lists each of the 150 predicted eclipses by the Julian day number at noon on the Gregorian proleptic calendar day that is equivalent to the proleptic Julian calendar day in which the eclipse is predicted to have occurred. With the NASA website catalogue dates converted to Gregorian proleptic calendar dates, the eclipse data became directly comparable to the solar event and calendar data in Tables 3.D and 3.E.

Based on the small maps published on the NASA website, 44 (58.7%) of the 75 predicted lunar eclipses within the 15 BCE-15 CE range of dates may have been visible in Mesoamerica and another ten (13.3%) perhaps were visible; and nine (12.0%) of the 75 solar eclipses seem to have been visible in Mesoamerica, with three more (4.0%) perhaps visible. The series of eclipses depicted in Table 3.F implies the possible use of a 6.5 draconic-year prediction and recording protocol from a solar eclipse to another solar eclipse or from a lunar eclipse to another lunar eclipse in approximately 2243-2246 days. In addition, the series indicates the possible use of a 6.5 draconic-year prediction and recording protocol from a solar eclipse to a lunar eclipse or from a lunar eclipse to a solar eclipse in approximately 2258-2260 days. These prediction and recording possibilities would be possible in a culture dedicated to tracking and measuring synodic, sidereal, and draconic months, and solar motion along a stellar-defined ecliptic.

For example, on 19 August 4 BCE (1720195), an annular solar eclipse apparently could have been visible over much of North and Central America. The path of the annular eclipse crossed parts of northern Canada, but the southern extent of the penumbra (a partial solar eclipse) appears to have included Mesoamerica. About 6.5 draconic years later, on 12 October 3 CE (1722440), a partial solar eclipse could have been visible in Antarctica, but not in Mesoamerica. Fifteen days later, on 27 October 3 CE (1722455), a total lunar eclipse is predicted to have occurred. The moon in zenith at the time of greatest eclipse happened over north-central Africa; however, the limits of partial and total eclipse extended into Mesoamerica. Table 3.F lists the number of whole days from the initial solar eclipse to the following solar eclipse as 2245 days and from the initial solar eclipse to the following lunar eclipse as 2260 days. Within the limit of 2266 days, both eclipse possibilities occurred.

As a second example, on 2 April 6 BCE (1719325), a partial lunar eclipse could have been visible across the American continents. About 2259 days later, on 8 June 1 CE (1721584), a total solar eclipse occurred over most of the Asian continent, but it was not visible in the Americas. Then another 2259 days later, on 15 August 7 CE (1723843), a total lunar eclipse was visible in the Americas. As Table 3.F indicates, many of such visible lunar eclipses separated by an invisible solar eclipse appear to have been possible. Indeed, some combinations shown in Table 3.F extend into three visible lunar eclipses separated by two invisible solar eclipses. Presumably, these lunar eclipse combinations and the eclipse seasons associated with the end of 13 mean draconic years (about 4488.81 days to about 4523.31 days) or 26 mean draconic years (about 8994.87 days to about 9029.37 days) were not unexpected by Nephite priest-astronomers who seem to have been tracking synodic and draconic months and draconic years for generations.

Moreover, in tracking the course of the sun and moon through the fixed stars, they seem likely to have understood the possibility of an intervening solar eclipse, which their rituals may have been intended to avert entirely or diminish in its effects.

Table 3.F also indicates that a visible solar eclipse sometimes occurred before or after a visible lunar eclipse, or between visible lunar eclipses. For example, on 19 August 4 BCE (1720195), an annular solar eclipse appears to have been visible in Mesoamerica and 2260 days later on 27 October 3 CE (1722455), a total lunar eclipse appears to have been visible there as well. The reverse pattern occurred on 25 August 6 CE (1723488) and 31 October 12 CE (1725747), when a partial lunar eclipse preceded a total solar eclipse by 2259 days and both were apparently visible in Mesoamerica. On 18 January 2 BCE (1720712), 26 March 5 CE (1722971), and 2 June 11 CE (1725230), a partial lunar eclipse occurred 2259 days before a hybrid solar eclipse that occurred 2259 days before a total lunar eclipse, and all three apparently were visible in Mesoamerica.

Hence, it seems unlikely that the Set-sum 2266 is merely a coincidental result of the creation of the other five Set-sums (1089, 1177, 1181, 1269, and 2450) or that a 2266-day Set-context has nothing to do with an eclipse season associated with 6.5 draconic years. Whatever the origin of the Set-sum 2266 may have been (and accords with sidereal months and synodic periods of Jupiter also may have been involved in its discovery and/or formalization), the data in Table 3.F (when considered with the relaxed near accord of 6.5 mean draconic years in Tables 2.L and 2.N in Part 2 of this Division) appears to be additional evidence of the Nephites' careful tracking, recording, and predicting of eclipses. A complete analysis of the data in Table 3.F is beyond the scope of this Division. However, the data does suggest the tracking, recording, and predicting of eclipse seasons during the nine-year period that preceded the inauguration of the NC era. In that regard, the data in Table 3.F may be compared with the data in Tables 3.D and 3.E.

Table 3.G lists each eclipse date in the 15 BCE-15 CE range (Table 3.F) which is also a New Year or year bearer date of a Cuicuilco, Olmec, Izapa, or Kaminaljuyu calendar year or is related to such a calendar date by a 260-, 2190-, or 2450-day interval. Table 3.G also specifies the 260-, 2190-, and/or 2450-day and eclipse season relationships, if any, associated with each spring equinox or summer solstice related date. Beginning with 20 March 15 BCE (1716025), an astronomical spring equinox date that has a 2266-day link to a later lunar eclipse date, and ending with 17 December 15 CE (1726889), an Izapa year bearer date that has a 2190-day link to an earlier lunar eclipse date, a total of 60 dates are listed in Table 3.G. Eighteen of the listed dates appear at one end or the other of a 2266-day link between an eclipse and a New Year, year bearer, or solar event date. The following six dates are listed in Table 3.G with two links.

Gregorian proleptic date	Julian day no.	Chronological event
8 December 10 BCE	1718114	Olmec New Year; visible lunar eclipse
22 December 10 BCE	1718128	Cuicuilco year bearer; invisible solar eclipse
21 March 5 BCE	1719679	Spring equinox confirmation; invisible lunar eclipse
22 June 1 CE	1721598	Astronomical summer solstice; visible lunar eclipse
18 December 9 CE	1724699	Izapa year bearer; possibly visible lunar eclipse
27 November 11 CE	1725408	Olmec year bearer; visible lunar eclipse

The dates in the 15 BCE-15 CE range that are listed in Table 3.G also appear to create another set of working dates in which both key NC era dates (birth date and inauguration date) may have occurred. This expanded analysis provided a third, more complete view of the potential meanings of the 2450-day and 2266-day Set-contexts in Third Nephi.

3.5.3 Potential dates associated with the Messiah's birth date

Based on the proposed symbolism of the Set-sums 1089, 1177, 1181, 1269, 2266, and 2450, the dates in Tables 3.D, 3.E, and 3.G all may be potential candidates for the Messiah's birth date. From that birth date, which was symbolized by signs visible to the Nephites, time seems to have been reckoned and eventually formalized into the NC era and its solar-based calendar, the inauguration of which also may have occurred on a date listed in Table 3.D, 3.E, or 3.G.

Tables 3.D, 3.E, and 3.G include 132 dates, each of which is associated with a day name in the Mesoamerican (260-day) ritual almanac. The list of 132 dates includes duplicated dates and day names. Sixty-two (47.0%) of the 132 listed day names are duplicates and 70 (53.0%) are unique. The day name 6 Owl? is used seven times and 7 Sun, 11 Sun, and 12 Death are each used with six dates. The day name 13 Deer occurs with five dates and the day names 1 Eagle and 13 Monkey each occurs with four dates. The day names 1 Monkey, 6 Quake, and 10 Owl? appear with three dates each. Twenty-five more day names each are used with two dates: 1 Jaw, 2 Foot, 2 Quake, 2 Serpent, 3 Wind, 4 Deer, 4 Night?, 5 Jaw, 7 Foot, 7 Hard?, 7 Quake, 7 Serpent, 7 Wind, 8 Death, 8 Serpent, 8 Wind, 9 Jaw, 9 Monkey, 10 Lord, 11 Death, 11 Quake, 12 Deer, 12 Wind, 13 Death, and 13 Jaw. The remaining 35 day names appear with single dates: 1 Death, 1 Owl?, 1 Wind, 2 Death, 2 Jaw, 2 Sun, 3 Death, 3 Quake, 3 Sun, 4 Foot, 4 Monkey, 4 Sun, 5 Death, 5 Owl?, 5 Quake, 5 Wind, 6 Lord, 6 Sun, 6 Water, 8 Deer, 8 Eagle, 8 Owl?, 9 Eagle, 9 Lord, 9 Star?, 10 Death, 10 Quake, 11 Foot, 11 Hard?, 11 Wind, 12 Eagle, 12 Monkey, 13 Eagle, 13 Lord, and 13 Rain. How are all these day names and dates to be sorted, so as to identify the birth date of Jesus?

3.6 Symbolizing the Messiah's birth date in the Book of Mormon

Part 2 of this Division concluded with a note that two chronological issues seemed to be addressed in the symbolism related to the Book of Mormon, but that a thorough analysis of those issues required a prior examination of the chronological structure and symbolism that appears in the first two chapters of Third Nephi. The two issues identified in Part 2 were the Messiah's birth date and the date when the third Nephite era was formalized to preserve and celebrate that birth date. This Part of Division 3 has examined the structure and proposed symbolism associated with the initial narrative group of Third Nephi and its 20 temporal-expressions regarding those issues.[101] Tables 3.D, 3.E, and 3.G presents the potential candidates for the Messiah's birth date and the NC era inauguration date, as symbolized by the 20 initial temporal-expressions of Third Nephi. Thus, this study now compares the symbolized birth and inauguration date information of Third Nephi with that of $Mormon_2$'s final temporal-expressions.

3.6.1 $Mormon_2$'s symbolic personalization of the Book of Mormon

The arithmetic process used to integrate birth and inauguration date information is suggested by the way $Enos_2$ appears to have personalized his record and that of his descendants.[102] The apparent use of a similar process by $Mormon_2$ implies that the procedure was understood and used by him both to personalize the Book of Mormon and to honor the record keeping legacy of $Jacob_2$ and his descendants who wrote in the small plates of Nephi. The process concerns day

[101] 3 Nephi preface-2:9.

[102] See Division 2, Part 3, Section 3.12.

name calculations in the 260-day ritual almanac, the most personal of the Mesoamerican calendars. The arithmetic process is basic to the way the ritual almanac appears to have been understood.[103] However, with respect to $Enos_2$ in the small plates of Nephi, only five stated cardinal or L number-terms were examined. Their (L) letter-set apparently was designed and initiated by $Enos_2$ to symbolize New Year and year bearer dates that were important during his lifetime. In $Mormon_2$'s proposed personalization, there are 215 unique Set-sum values to be examined and they may relate, not only to the birth and/or NC era inauguration dates, but, at least, to three separate dates implied in $Mormon_2$'s early life: his birth date, the date of his priesthood appointment as the new Nephite record keeper, and the date when he commenced his official duties in the land of Zarahemla. $Mormon_2$ appears to have coordinated these symbolic dates in his lifetime with dates he expressly described in the NC era and, thereby, he coordinated them with the Messiah's birth date and the inauguration of the NC era hundreds of years earlier. Issues involving $Mormon_2$'s symbolization of the other meaningful days in his early life are addressed in later Sections of this Part. This Section examines the symbolism related to the Messiah's birth date and the inauguration of the Nephite Christian era.

The following day name calculations bring together two groups of cardinal numbers: those representing the 215 unique Set-sum values identified in Part 2 of this Division[104] and those representing the days of the 260-day ritual almanac depicted in Figure 3.1 in Part 3 of Division 2. The day 1 Sun is the first day name in that Figure 3.1. The Olmec day Sun or its counterpart (such as Alligator, Day, or Root) in the 260-day calendars of other geographic and/or cultural groups "was everywhere the first day" of the ritual almanac.[105] Early in the development of the 365-day Mesoamerican calendar, the day named 1 Lord (at the other end of the first column in Figure 3.1) was the "name day" (the senior year bearer or last day) of the immensely important, terminally named, Cuicuilco calendar in which the summer solstice fell on day 6 Sun in 739 BCE. The successive annual year bearers of that calendar every four years were Type V: Lord, Serpent, Foot, and Eagle. About 220 years later, the Izapa calendar appears to have confirmed the summer solstice astronomy and calendrical mathematics of the 520-year solar era suggested by the Cuicuilco calendar. However, the four annual year bearers of the Izapa calendar were Type I: Sun, Death, Monkey, and Owl?. This change suggests that after about 519 BCE, senior year bearers named 1 Sun would have been understood and that, by the time of $Mormon_2$ some 800 years later, the Olmec day Sun or its counterpart may have resulted in the ritual almanac often being depicted in an order like that shown in Figure 3.1 of Division 2.

The day name calculations assume that each of the 215 unique Set-sum values in $Mormon_2$'s concluding writings may symbolize a specific day name in the ritual almanac. Table 3.H of this Division presents the 215 unique Set-sum values associated with his concluding temporal-expressions. Table 3.H also lists their sources in the tables related to Part 2 of this Division, where the associated Sets, Set-sums, and Set-contexts are depicted. The following examples present the simple and more complex arithmetic involved in determining specific day names in Figure 3.1 of Division 2 that may be symbolized by the unique Set-sum values.

Set-sum	Simplifying calculation	Remainder as a ritual almanac day
40	40 – (0x260) = 40	40 symbolizes day 1.t or Lord
60	60 – (0x260) = 60	60 symbolizes day 8.t or Lord

[103] Thompson, *Maya Hieroglyphic Writing: Introduction*, 66-67.

[104] See Division 3, Part 2, Sections 2.6.8 and 2.7.8 and Table 2.M.

[105] Edmonson, *The Book of the Year: Middle American Calendrical Systems*, 4-5, 169-77, 208-14, 220-31, 241-43, 246-50.

In these simple instances, the Set-sum directly symbolizes a day name and number in the 260-day calendar because the Set-sum is less than 261. A simplifying calculation is not needed. Table 3.H notes this fact with the note "None required".

In the following examples drawn from the table, a simplifying calculation is required because the Set-sum is more than 260. The calculation reduces the remainder to a number less than 261.

Set-sum	Simplifying calculation	Remainder as a ritual almanac day
820	820 – (3x260) = 40	40 symbolizes day 1.t or Lord
7600	7600 – (29x260) = 60	60 symbolizes day 8.t or Lord

Thus, Set-sums 40 and 820 both symbolize the day name 1 Lord, and Set-sums 60 and 7600 both symbolize the day name 8 Lord.

Of the 215 day names apparently symbolized in $Mormon_2$'s concluding writings and listed in Table 3.H, only 37 (17.2%) appear in Tables 3.D, 3.E, and 3.G, where they constitute 52.9% of the 70 unique day names. The day names 6 Owl? and 11 Sun occur in Tables 3.D, 3.E, and 3.G (respectively seven and six dates) and in Table 3.H (respectively two and one Set-sums). These are, by far, the two most often repeated day names that appear both in Tables 3.D, 3.E, and 3.G, and in Table 3.H. The day names 7 Sun and 12 Death (each six dates), 13 Deer (five dates), 1 Eagle and 13 Monkey (each four dates), and 1 Monkey (three dates) have no counterparts in Table 3.H. Of the two day names that occur most often (6 Owl? and 11 Sun), 6 Owl? is the one that also appears to structure a consistent chronology implied by the Set-sums 2266 and 2450 in Third Nephi. In this proposed chronology, the day name 6 Owl? occurs on both the Messiah's birth date and the inauguration date of the NC era.

3.6.2 The proposed birth and NC era inauguration dates

This Section presents the chronology proposed in this study for the Messiah's birth date and the subsequent inauguration date of the NC era. The most vital indications of those two dates are the day names 6 Owl? and 7 Quake, days 136 and 137 in Figure 3.1 of Division 2. Day names 136 and 137 are each symbolized by a separate Set in Table 2.F of this Division. These are Sets composed of number-terms associated with $Mormon_2$'s concluding year-term letter pattern.[106] These two Sets may be described as follows.

6 Owl? or day 136

This Set includes all stated ordinal or K number-terms, all cardinal or L number-terms, and all quantified common or M number-terms associated with the (AB[A]BA)(BABABA)BA[B]AB) year-term letter pattern that concludes the plates of Mormon. Each M number-term is quantified by the stated number from the previous text to which it refers. The larger hypothetical alternative values suggested for three M number-terms (Mormon 1:8, 11, and 2:1) are ignored.[107] Hence, this Set-sum (8716) is the second largest for the "Total letter pattern" in Table 2.F. (The largest is 8719, which includes the larger hypothetical M values.) The simplifying calculation indicated in Table 3.H is 8716 – (33x260) = 136.

[106] 4 Nephi 1:48-Mormon 8:6.

[107] See Division 3, Part 2, Section 2.6.7.

7 Quake or day 137

This Set includes all stated ordinal or K number-terms, all cardinal or L number-terms, and the single common or M number-term associated with the central (BABABA) letter-group in $Mormon_2$'s concluding year-term letter pattern.[108] However, the M number-term is not quantified in this alternative Set-sum. As a result, this Set-sum (2737) is the second largest for the "Total letter pattern" of this letter-group in Table 2.F. (The largest is 3082, which includes the referenced number 345.) The simplifying calculation indicated in Table 3.H is 2737 – (10x260) = 137.

The day name 6 Owl? is symbolized by a second Set that appears in Table 2.J of this Division. This is one of the four Sets composed of number-terms associated with $Mormon_2$'s concluding, alternatively delimited, overlapping, narrative-link letter patterns.[109] The other three Sets related to these narrative-link letter patterns appear to imply three dates associated with $Mormon_2$'s early life. $Mormon_2$'s three personal dates are discussed in later Sections of this Part. The narrative-link Set implying the birth date of the Messiah and the inauguration date of the NC era (the era used by $Mormon_2$ with respect to the personalization of his record) may be described as follows.

6 Owl? or day 136

This Set includes all stated ordinal or K number-terms associated with the (T) letter-sets in the [T]-centered letter-group (QTQ[T]QTQ) shown in Table 2.D of this Division. The Set and Set-sum for "All (T) letter-sets" in Table 2.J may be depicted as 21+15+360 = 396. The simplifying calculation indicated in Table 3.H is 396 – (1x260) = 136.

The 6 Owl? symbolism suggested in Table 2.F relies on facts that presumably were uncertain at the time of $Mormon_2$'s death. His son $Moroni_2$ had to survive until the 400th NC calendar year had ended and then he had to fulfill his father's command to record that "four hundred years have passed away since the coming of our Lord and Savior".[110] $Moroni_2$ was able to survive and complete his father's record in that manner; so, the Set-sum 8716 and 6 Owl? symbolism suggested in Table 2.F became a reality of the text. These uncertainties involving $Moroni_2$ did not exist at the time of $Mormon_2$'s death with respect to the 6 Owl? symbolism suggested in Table 2.J or the 7 Quake symbolism suggested in Table 2.F. Thus, if $Moroni_2$ had not survived and completed his father's record as commanded, the 6 Owl? and 7 Quake symbolism still would have been presented in $Mormon_2$'s concluding temporal-expressions. Furthermore, the related symbolism of the Set-sums 2266 and 2450 still would have been presented by the initial 20 temporal-expressions of Third Nephi. The gravity of $Mormon_2$'s "commandment" to his son may be indicated in part by the 6 Owl? symbolism related to the planned and hoped for Set-sum 8716 in $Mormon_2$'s concluding temporal-expressions.

The day names 6 Owl? and 7 Quake appear in the following chronological order with seven (10.0%) of the 70 proposed dates in Tables 3.D, 3.E, and 3.G of this Division.

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[108] Mormon 2:2-3, 9, 15-16, 20, 22, 28; 3:1, 4.

[109] 4 Nephi 1:48-Mormon 8:6.

[110] Mormon 8:6.

7 Quake, 6 July 6 BCE (1719420)

Date number 3 in Table 3.D occurred 2450 days prior to the expected spring equinox confirmation date in 2 CE, when the 105-day misalignment of the equinox and Kaminaljuyu calendar was predicted to be astronomically and calendrically confirmable.

6 Owl?, 21 March 5 BCE (1719679)

Date number 1 in Table 3.E and number 18 in Table 3.G is the proposed birth date of the Messiah symbolized by the chronological structure of $Mormon_2$'s 20 temporal-expressions in the initial narrative group of Third Nephi and in his concluding temporal-expressions in the plates of Mormon. The day occurred 260 days before the calculated Olmec calendar New Year in 5 BCE and 2450 days prior to the expected Olmec calendar New Year in 2 CE. For this spring equinox confirmation date, the Nephite priest-astronomers also may have been predicting a possible lunar eclipse. A total lunar eclipse is predicted to have been visible throughout most of Europe, Africa, and Asia (as prophesied by Isaiah[111]), but it was not visible in Mesoamerica. The priest-astronomers may have observed the potentially visible solar eclipse 2259 days earlier on 9 Quake, 13 January 11 BCE (1717420). The possibility of a lunar eclipse on the 5 BCE spring equinox confirmation date seems likely to have been predicted in connection with the proposed system of predicting and tracking eclipse seasons separated by 6.5 draconic years. Based on the system suggested by the data in Table 3.F of this Division, a possible solar eclipse also may have been forecasted for 4 Sun, 6 March 5 BCE (1719664), but it was not visible in Mesoamerica. The later possibilities of a lunar eclipse on 1 Lord, 13 May 2 CE (1721923) and a solar eclipse on 3 Eagle, 28 May 2 CE (1721938) also may have been forecasted in the system suggested by the Set-sum 2266 in Third Nephi. According to the small maps published on the NASA website, the 13 May 2 CE partial lunar eclipse and the 28 May 2 CE penumbral solar eclipse both were visible in Mesoamerica. Both occurred within the single eclipse season that followed this birth date and that seems to be symbolized by the Set-sum 2266.

7 Quake, 22 March 5 BCE (1719680)

Date number 4 in Table 3.D immediately followed the proposed birth date and occurred 260 days before the calculated Kaminaljuyu calendar New Year in 5 BCE and 2450 days prior to the expected Kaminaljuyu calendar New Year in 2 CE. Perhaps this date represents the time when the Nephites first sighted the prophesied "new star".[112] The narrative statements about "the sign which had been given" of the Messiah's birth date include a report that "a new star did appear, according to the word". This report does not occur in the description of the night without darkness, presumably because "that night … was as light as though it was midday". The report about the star's appearance follows a description of the sun rising after the night without darkness; so, the first observation of the new star presumably had to wait until the darkness of the

[111] Isaiah 7:10-16; 2 Nephi 17:10-16.

[112] Helaman 14:5; see also 2 Nephi 26:3, 8; Numbers 24:15-19.

following night or one of the subsequent nights. The impression given by the text is that a "new star" was first observed within an interval following the night without darkness that was close enough to the rest of "the sign" to be reasonably seen as part of it.[113] Thus, the text appears to rule out the possibility that the "new star" was the periodic recurrence of the comet Halley, which, according to an ancient Chinese record, appeared on 24 August 12 BCE (1717278) and remained visible for 56 nights, perhaps until 19 October 12 BCE (1717334).[114] Furthermore, the apparently detailed attention given to planetary periods by Nephite priest-astronomers[115] would seem to rule out the possibility that their "new star" was the triple conjunction of Saturn and Jupiter in May/June, September/October, and December 7 BCE or a massing of those two planets with Mars in February/March 6 BCE. Such events have been predicted to occur once every 900 or 800 years, respectively.[116] In the 90th Judges calendar year, $Nephi_2$ recorded that "there were great signs given unto the people, and wonders…. And angels did appear unto men, wise men, and did declare unto them glad tidings of great joy".[117] Whether the "great signs" included, or were limited to, "great signs" associated with the conjunctions and massing, is not clear from the text. What seems to be clear is that the conjunctions and massing occurred one or two years before the night without darkness, which itself occurred before the appearance of the "new star". Another ancient Chinese record reports that a "broom star comet" appeared in March 5 BCE and remained visible for over 70 days; so, the timing and brightness of this comet are consistent with the Third Nephi report of the observation of a "new star", which apparently was near the eastern horizon in the early morning hours of 23 March 5 BCE.[118]

6 Owl?, 6 December 5 BCE (1719939)

This Olmec calendar New Year, date number 2 in Table 3.E and number 21 in Table 3.G, occurred 260 days after the spring equinox confirmation date in 5 BCE and 2190 days before the Olmec calendar New Year that followed the spring equinox confirmation date in 2 CE. This date, when compared with dates maintained by priest-astronomers living outside Nephite lands, could have been used as evidence that a night without darkness had been observed by believing Nephites and Lamanites during the previous Olmec calendar year.

6 Owl?, 5 October 4 CE (1722799)

Date number 15 in Table 3.D occurred 12 ritual almanacs (3120 days) following the 6 Owl? spring equinox confirmation date in 5 BCE. Presumably, the 105-day misalignment predicted by the Kaminaljuyu calendar had been confirmed in 2 CE and the existence of the night without darkness in 5 BCE had been astronomically proven. The day name 13 Deer of the predicted 2 CE spring equinox confirmation

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[113] 3 Nephi 1:19-21.

[114] Donald K. Yeomans, *Comets: A Chronological History of Observation, Science, Myth, and Folklore* (New York: John Wiley & Sons, 1991), 255-300, 367.

[115] See Division 3, Part 2, Section 2.7 and Table 2.O.

[116] Colin J. Humphreys, "The Star of Bethlehem, A Comet in 5 BC and the Date of Christ's Birth," *Tyndale Bulletin* 43:1 (1992) 31-56, accessed at galaxie.com/article/tynbul43-1-02; Stahlman and Gingerich, *Solar and Planetary Longitudes for Years -2500 to +2000*, 306.

[117] Helaman 16:13-14.

[118] Yeomans, *Comets: A Chronological History*, 367.

date is symbolized as date number 18 in Table 3.E; however, it is not symbolized in Table 3.H, presumably because it is unrelated to Mormon$_2$'s personalization. Nine 12-month lunar years measured from the 5 BCE spring equinox confirmation date (about 3189 or 3190 days) had not been completed by the 2 CE spring equinox confirmation date and would not be completed for another 998 or 999 days. Nine 365-day solar years (3285 days) measured from the 5 BCE spring equinox confirmation date had not been completed by the 2 CE spring equinox confirmation date and would not be completed for another 1094 days. Nonetheless, this 6 Owl? date in October 4 CE may indicate that the decision had been made to inaugurate the NC era 260 days later on the astronomical summer solstice of 5 CE.

6 Owl?, 22 June 5 CE (1723059)

Date number 16 in Table 3.D is the proposed inauguration date of the NC era. On this day, the Nephite priest-astronomers could have reckoned that 13 ritual almanacs (3380 days) had passed away since the 6 Owl? spring equinox confirmation date in 5 BCE. During that interval, nine 365-day years in the new solar era, plus 95 days, had passed away.[119] The 100th Judges calendar year and the 609th Lehi calendar year also had been completed.[120] The proposed inauguration on this 6 Owl? astronomical summer solstice honored both the 6 Owl? 5 BCE birth date and the ancient astronomical and calendrical heritage of the summer and spring era calendars that had begun with the institution of the Cuicuilco calendar on the 6 Sun summer solstice in 739 BCE. Furthermore, the Cuicuilco calendar's measurement of the summer era could have been confirmed by observation on the 6 Owl? 5 CE astronomical summer solstice, when a 180-day misalignment could have been measured between the calendar count of 743 365-day years (271,195 days) and 743 tropical years (271,374.9457 days). It would appear to be no accident that the two calendrical Set-sums in the initial narrative group of Third Nephi that imply 9-day cycles (1089 and 1269) are separated by 180 days, an interval of nine 20-day cycles.[121]

6 Owl?, 9 March 6 CE (1723319)

Date number 18 in Table 3.D is the first 6 Owl? day that could have been documented after the inauguration of the NC era 260 days earlier. Fourteen ritual almanacs (3640 days) had passed since the proposed 6 Owl? 5 BCE birth date. Ten days after the 6 Owl? of March 6 CE, the New Year of the tenth NC calendar year would be celebrated. The day would be 3 Death, 19 March 6 CE (1723329), a day name not symbolized in Table 3.D, 3.E, 3.G or 3.H. The tenth NC calendar New Year would occur two days before the 5 Star?, 21 March 6 CE spring equinox confirmation date (1723331), a clear indication that, as the priest-astronomers expected, a two-day misalignment between the 365-day NC calendar year and the tropical year had occurred during the previous nine years. While the day name 5.h or Star? is one of the 215 day names symbolized in Table 3.H, it has no 260-, 2190-, 2266-, or 2450-day connections with New Year, year bearer,

[119] 3 Nephi 2:8.

[120] 3 Nephi 2:5-6.

[121] See Section 3.4.1 above.

summer solstice, or other spring equinox related dates; hence, 5 Star?, 21 March 6 CE does not appear in Table 3.D, 3.E or 3.G.

3.7 A catalogue of NC calendar New Year dates

Table 3.I of this Division presents a catalogue of NC calendar New Year dates that range from 6 Owl? [0 G 1 NC] 21 March 5 BCE (1719679), the proposed birth date of the mortal Messiah, through the 401st New Year, 3 Owl? [0 G 401 NC] 15 December 395 CE (1865679), when Moroni$_2$ could finally comply with his father's commands and record that 400 NC calendar years had passed away. These two dates represent the proposed limits of the NC era context, as expressly recorded or symbolized in the plates of Mormon. The first date was not officially celebrated as the first day of a new solar era until after nine complete 365-day years had passed. The New Year and name day of the tenth year in the reckoning of the new era calendar occurred on a day named 2 Sun [0 G 10 NC] 19 March 5 CE (1722964). By that point, the existence of the night without darkness apparently had been sufficiently studied, reckoned, and verified to Nephi$_3$, his associate priest-astronomers, and their civil leaders. The planned inauguration of the new spring era occurred 105 days later, at the summer solstice named 6 Owl? [15 K 10 NC] 22 June 5 CE (1723059). The inauguration of the new Nephite era honored the immense work of priest-astronomers who had created the Cuicuilco summer era and had maintained it and its calendrical progeny for 743 years.

The New Year dates in Table 3.I are based on the year-related narratives of Third Nephi, Fourth Nephi, and Mormon. The protocol for identifying these dates in the text is illustrated by the following three examples. When the end of a previous year is not mentioned, but the year-related narrative says something like "in the thirteenth year there began to be wars and contentions",[122] then the New Year of the 13th year is assumed to have occurred and it is recorded in the table (No. 5). Similarly, when a narrative ends by saying something like "thus the eighteenth year did pass away",[123] then the New Year of the 19th year is assumed to have occurred and it is listed in the table (No. 11). Fourth Nephi 1:21 states that "it was an hundred and ninety and four years from the coming of Christ". This is the second and final use of the formal, year-end, it-was narrative-link. In both instances where it-was narrative-links are used (the other being 3 Nephi 1:1), lengthy temporal prophecies are about to be fulfilled. When "it was" 194 years after the Messiah's birth date, those years had existed in fact and Table 3.I assumes that the dawn of the 195th NC calendar New Year had occurred (No. 42).

After the last great battle of the Nephite extinction, Moroni$_2$ survived by himself "to write the sad tale of the destruction of [his] people" and to record that "four hundred years have passed away since the coming of our Lord and Savior", as he had been commanded by his father.[124] New Year No. 64 in Table 3.I records the day when the 401st NC calendar year would have begun, if there had been Nephite priest-astronomers to record the passage of time following the great battle. Moroni$_2$, hiding alone for some 15 years, seems unlikely to have kept track of time with anything more perhaps than a count of seven days and observance of the passing moons and seasons. While he may not have known the date of the 401st NC calendar New Year, he may have simply waited until a point in what would have been the 401st NC calendar year when he could safely retrieve the plates of Mormon from their hiding place and record his final message.

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[122] 3 Nephi 2:11.

[123] 3 Nephi 4:4.

[124] Mormon 8:1-13.

He wrote to himself and later readers, "I will write and hide up the records in the earth. And whither I go, it mattereth not."[125] He later abandoned his intention to wander, apparently because it did matter to the Lord where he lived. With the burden of Mormon$_2$'s commands finally lifted, Moroni$_2$'s attitude and involvement with all the records appears to have changed. He obtained access to blank plates on which to write and to plates containing the Book of Ether and he wrote extensively on the plates that this study refers to as the plates of Moroni.

A generalized mention of the 321st NC calendar year also may be noted in the beginning narratives of Mormon$_2$'s personal record, where he wrote that "about the time that Ammaron hid up the records unto the Lord, he came unto me, I being about ten years of age".[126] At the end of his previous book, Mormon$_2$ had recorded that "when three hundred and twenty years had passed away, Ammaron being constrained by the Holy Ghost did hide up the records which were sacred". Furthermore, Mormon$_2$ noted that the record of Ammaron ended with "the three hundred and twentieth year from the coming of Christ".[127] Thus, "the time that Ammaron hid up the records unto the Lord" most likely occurred in the 321st NC calendar year, the first year that Mormon$_2$ apparently was chosen to remember and eventually to report.[128]

The visit by Ammaron may have had antecedents not mentioned by Mormon$_2$. He briefly noted that he "began to be learned somewhat after the manner of the learning of my people" and Ammaron commended him, "I perceive that thou art a sober child and art quick to observe". Presumably, Mormon$_2$'s "learning" had come to Ammaron's attention, and they had spent enough time together for Ammaron to conclude his visit by appointing Mormon$_2$ as the next official Nephite record keeper. One would think that only then did Ammaron privately disclose to Mormon$_2$ the secret location of the hidden records.[129]

For the 321st NC calendar year, the New Year and year bearer is 1 Owl?. In the Gregorian proleptic calendar and Julian Day count, the date is 4 January 316 CE (1836479). The day was known in the earlier summer era and spring era 365-day calendars of southern Mesoamerica as 5 G (Cuicuilco and Olmec calendars) and 4 G (Izapa and Kaminaljuyu calendars). The letter G is used for the month name because such names generally are not known or certain for these early 365-day calendars. In the spring era 365-day Tikal calendar, which appears to have been inaugurated in 84 CE, the equivalent day number and month name is 9 G, *Kej*, or Deer.[130] In the NC calendar year, months were given ordinal numbers rather than, or perhaps in addition to, their local names.[131] However, the "seating" or "0" day of the "first month" of the NC calendar year seems likely to have been understood as 0 G and to have been reckoned with the Kaminaljuyu spring era calendar by moving month X forward to become the five days that preceded the newly designated 0 G, spring equinox, 21 March 5 BCE. As reckoned for that year, the priest-astronomers adjusted for the accumulated 104-day misalignment between the Kaminaljuyu calendar year and the current spring equinox. This anti-leap-year adjustment appears to have been an accurate reckoning for that year; however, the Nephites did not officially implement their adjustment until after the eventual 105-day misalignment of the Kaminaljuyu calendar had been confirmed on the spring equinox of 2 CE. Table 3.I depicts the NC New Year

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[125] Mormon 8:4.

[126] Mormon 1:2.

[127] 4 Nephi 1:48-49.

[128] Mormon 1:3-4.

[129] Mormon 1:2-3.

[130] Edmonson, *The Book of the Year: Middle American Calendrical Systems*, 122, 246-50.

[131] 3 Nephi 4:7, 11; 8:5.

as being day 0 in the "G or 1st" month in the new era 365-day calendar year and Figures 3.1 through 3.8 of this Division list this month in the same way for the depicted 310th, 311th, 312th, 320th, 321st, 322nd, 325th, and 326th NC calendar years, all of which are discussed in the following analysis of $Mormon_2$'s personalization of the concluding year-related narratives in the plates of Mormon.

3.8 Symbolizing the early dates of $Mormon_2$'s life

The proposal that $Mormon_2$ personalized his concluding record by including important early dates in his life is founded on the example of $Enos_2$ in the small plates of Nephi.[132] In the plates of Mormon, the diction, language typology, and placement of $Mormon_2$'s concluding temporal-expressions and their associated narratives suggest a similar personalization that symbolizes important dates in his early life. His final year-term letter-groups (ABABA)(BABABA)(BABAB) clearly honor his ancestor $Nephi_1$ and represent the alternatively delimited, overlapping, year-term letter patterns designed by $Nephi_1$ for the small plates. $Nephi_1$'s (ABABAB) letter-group, when delimited as (ABABA) in First and Second Nephi and as (BABAB) in Second Nephi and the remainder of the small plates, and when understood through the symbolism of the year-related narratives, contrasts $Nephi_1$'s views of political and prophetic powers.[133] $Mormon_2$'s central year-term letter-group contrasts the beginning of Nephite political power under his ancestor $Nephi_1$ (ABABAB) with the end of the Nephites' political power that followed their apostacy from the unifying principles of the Messianic Nephite religion (BABABA).[134] $Mormon_2$'s place in the chronology of that religion was finalized during the ten years of peace that followed the victories of his armies and the territorial treaty the Nephites made with their Lamanite enemies. However, the wickedness of the Nephites increased, and their neighbors grew determined to destroy them.[135]

The final narrative-links in the plates of Mormon, the ones that accompany $Mormon_2$'s three concluding year-term letter-groups, initially appear to be a variable sequence QTRTQTQRQRQ RQRTQRQRQR letter pattern; however, Part 2 of this Division suggested that they represent $Mormon_2$'s own alternatively delimited, overlapping, letter patterns: (QTQ[T]QTQ) in Fourth Nephi and the Book of Mormon; and (RQRQRQR[Q]RQRQRQR) solely in the Book of Mormon.[136] While $Nephi_1$'s alternatively delimited year-term letter patterns structured the narratives describing the rise of Nephite political and religious powers, $Mormon_2$'s alternatively delimited narrative-link letter patterns structured the narratives describing the fall of those powers. The symbolism of $Mormon_2$'s two narrative-link letter-groups includes the day name 6 Owl?, which has been associated with the birth date of the Messiah and the inauguration date of the NC era calendar, as proposed in Section 3.6 above. The crucial point suggested by the Messiah's birth date is the identity-creating, community-building, and people-maintaining power it gave $Lehi_1$ and his believing followers, and the long-term influence his 600-year prophecy had for all the believing generations who looked forward to the prophecy's fulfillment.

When that prophecy was fulfilled, at least to the believers' satisfaction, the Nephites seem likely to have begun to consider, and their priest-astronomers began to measure, additional

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[132] See Division 2, Part 3, Section 3.12.

[133] See Division 2, Part 2, Section 2.3.3.

[134] Mormon 2:28-3:16; 8:6-8.

[135] Mormon 4:1-22.

[136] See Division 3, Part 2, Sections 2.7.4 and 2.7.5.

temporal prophecies. $Nephi_1$ reiterated prophecies in the brass plates that spoke of the death and resurrection of the Messiah.[137] $Samuel_2$ the Lamanite prophesied that signs of the Messiah's death would occur some 33 years after his birth.[138] $Nephi_1$ prophesied of an apostacy that would begin in the fourth generation after the Messiah's birth and he also foresaw the subsequent destruction of the Nephites as a people.[139] As $Mormon_2$ composed the plan for his last book, just the final destruction of his people remained to be fulfilled. He could only hope that he or his son $Moroni_2$ might survive the extinction of the Nephites and that one of them could leave a complete record of the ultimate results of Nephite apostacy. Part of $Mormon_2$'s challenge was to document the veracity of his record in ways that later generations would understand. Symbolizing his writings as the ancient Nephite prophets appear to have done appears to have been one of those ways.

As the fifth generation official Nephite record keeper since the Messiah's birth, $Mormon_2$ chose to verify the accuracy of the NC era context and his own part in the saga by symbolically recording early dates in his own life and their coordination with then-current NC calendar years. This personalization of his final book appears to be accomplished, at least in part, by his initial year-related narratives in the Book of Mormon. These sparse narratives minimized the use of space on the last few plates of Mormon, while simultaneously providing a verifiable foundation for the temporal-expressions and their chronological symbolism. Nine temporal-expressions were placed in the initial narrative group of the Book of Mormon to describe intervals of time measured from $Mormon_2$'s birth date. Like the 20 temporal-expressions in the initial narrative group of Third Nephi, the nine initial temporal-expressions of the Book of Mormon appear to have been organized with three levels of symbolism: number-term Set-contexts, calendrical number patterns, and 260-day calendar dates to accompany the narratives. The analysis of these proposed levels of symbolism in $Mormon_2$'s concluding year-related narratives began in Part 2 of this Division[140] and concludes in the following Sections of this Part 3.

3.8.1 The initial narrative group describing $Mormon_2$'s early years

The initial narrative group of the Book of Mormon appears to be the personalizing counterpart of the initial narrative group of Third Nephi. Rather than 20 temporal-expressions as in Third Nephi, the initial narrative group in the Book of Mormon includes nine temporal-expressions. These temporal-expressions and their associated narratives, in consecutive order, may be described as follows.

"being about ten years of age" (Mormon 1:2)

The first year-related narrative establishes a temporal setting for $Mormon_2$'s age "about the time that Ammaron hid up the records unto the Lord". This chronological statement refers to the 321st NC calendar year without using a temporal-expression and provides the initial equation between the nine temporal-expressions measured from $Mormon_2$'s birth date and the NC calendar years measured from the Messiah's birth date.[141] According to Webster's 1828

[137] 1 Nephi 19:8-12.

[138] Helaman 14:1; 3 Nephi 8:1-4.

[139] 1 Nephi 12:1-19.

[140] See Division 3, Part 2, Sections 2.4-2.8.

[141] 4 Nephi 1:48.

dictionary, the adverb *about* in the phrase *about ten* means "[n]ear to".[142] The phrase *near to ten years of age* could mean "almost ten, but still nine years of age". The phrase *about ten years of age* also could mean "around ten years of age", "nearly eleven, but still ten years of age", or perhaps even "eleven years of age, but just recently so". Alternatively, *about ten years of age* might also mean "nine [or ten] when Ammaron arrived, but ten [or eleven] when he left". The number-term "about ten" provides Mormon$_2$'s related Sets with the cardinal number 10.

"are about twenty and four years old" (Mormon 1:3)

The second year-related narrative projects a future temporal setting in which Mormon$_2$, when his age reached "about twenty and four years old", was to comply with Ammaron's directive to remember what he had seen over the next 14 years and then to begin engraving the observations he had made on blank plates of Nephi. The record does not state that Mormon$_2$ was to observe events in the following 14 years, rather it ties the time when he was to start engraving to his approximate age and thus, to his birth date. Mormon$_2$ later recorded that he complied with "the words of Ammaron".[143] The number-term "about twenty and four" provides Mormon$_2$'s related Sets with the cardinal number 24.

"being eleven years old" (Mormon 1:6)

When Mormon$_2$ was definitely "eleven years old", he "was carried by [his] father into the land southward, even to the land of Zarahemla". Presumably, as one of the few persons, or perhaps the only person, then living who knew where the Nephite records were hidden, Mormon$_2$ then became involved in official Nephite record keeping activities with other leaders of the priest-astronomers in Zarahemla. The number-term "eleven" provides Mormon$_2$'s related Sets with the cardinal number 11.

"in this year" (Mormon 1:8)

Mormon$_2$ implies that while he was in his 12th year, "there began to be a war" between Nephites and Lamanites "in the borders of Zarahemla by the waters of Sidon".[144] Apparently, the proximity of the conflict impressed the young Nephite official. The common number-term "this" provides Mormon$_2$'s related Sets either with no quantity or with the cardinal number 11, which is stated in the number-term of Mormon 1:6. Hypothetically, one might consider "this" to mean "the 12th" and to provide the related Sets with the cardinal number 12.

"in this same year" (Mormon 1:11)

Mormon$_2$ recorded that while he was still 11 years old, the Nephites and Lamanites had "a number of battles, in the which the Nephites did beat the Lamanites and did slay many of them. And … the Lamanites withdrew their design [apparently to conquer, pillage, and/or capture] and there was peace settled

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[142] Webster, *An American Dictionary of the English Language*, I: [95] (about).

[143] Mormon 2:17-18.

[144] Mormon 1:8-11.

in the land".[145] The common number-term "this same" provides $Mormon_2$'s related Sets either with no quantity or with the cardinal number 11, which is stated in the number-term of Mormon 1:6. Again, hypothetically, one might consider "this same" to mean "the 12th" and to provide the related Sets with the cardinal number 12.

"of about four years" (Mormon 1:12)

"[P]eace did remain for the space of about four years, that there were no bloodshed. But wickedness did prevail upon the face of the whole land, insomuch that the Lord did take away his beloved disciples … [a]nd the Holy Ghost did not come upon any because of their wickedness and unbelief".[146] The number-term "about four" provides $Mormon_2$'s related Sets with the cardinal number 4.

"being fifteen years of age" (Mormon 1:15)

$Mormon_2$ describes himself as "being somewhat of a sober mind" at the age of 15 and "therefore I was visited of the Lord and tasted and knew of the goodness of Jesus. And I did endeavor to preach unto this people, but my mouth was shut. And I were forbidden that I should preach unto them, for behold, they had willfully rebelled against their God".[147] This restriction on preaching may have saved his life. More than two decades of war and bloodshed later, after $Mormon_2$'s troops "had again taken possession of the lands of our inheritance" and a peace treaty had been established between Nephites and Lamanites, the Lord commanded him to "Cry unto this people: Repent ye and come unto me and be baptized and build up again my church, and ye shall be spared". He obeyed the Lord, "but it was in vain" because the Nephites "did harden their hearts against the Lord their God".[148] The Nephites chose to ignore or reject the Lord's promise made to their generation through the words of their then-well-known, successful, military and religious leader. The number-term "fifteen" provides $Mormon_2$'s related Sets with the cardinal number 15.

"in that same year" (Mormon 2:1)

While $Mormon_2$ was 15 years of age, "there began to be a war again between the Nephites and the Lamanites". The related chronological arithmetic is simple: 11+4 = 15. $Mormon_2$ describes himself as "young", "large in stature", and "appointed" to be "the leader of their armies". The choice of a young leader who had been "visited of the Lord" may have seemed wise to the remaining believers among the Nephites. Ammaron's directives to $Mormon_2$ about four years earlier seemed to foretell that the boy's life would be spared until he was at least 24 years old. For the unbelieving Nephites, placing a young Messianic leader in the forefront of a battle with the Lamanites may have seemed an efficient way to rid themselves of a believer who knew where the records were hidden and to further belittle the believers' doctrines and prophecies. The common number-term "that same" provides $Mormon_2$'s related Sets either with no quantity or with the

[145] Mormon 1:11-12.

[146] Mormon 1:12-14.

[147] Mormon 1:15-16.

[148] Mormon 2:27-3:3.

cardinal number 15, which is stated in the number-term of Mormon 1:15. For a third time, hypothetically, one might consider "that same" to mean an ordinal number "the 16th" and to provide the related Sets with the cardinal number 16.

"in my sixteenth year" (Mormon 2:2)

Concomitant with his military appointment, the 15-year-old $Mormon_2$ "did go forth at the head of an army of the Nephites against the Lamanites". He does not expressly mention his own combat, a Nephite victory, or a Lamanite retreat. With the initial narrative group of the Book of Mormon completed, he simply reports that "three hundred and twenty and six years had passed away". Perhaps the implied report of his survival to the end of the year was sufficient. With this first express quantification of an NC calendar year in this book, a concluding equation is provided between the nine temporal-expressions measured from $Mormon_2$'s birth date and the NC calendar years measured from the Messiah's birth date. The personalized ordinal number-term "my sixteenth" provides $Mormon_2$'s related Sets with the cardinal number 16.

3.8.2 Number pattern symbolism in the nine temporal-expressions

The meanings potentially associated with a 9-day cycle in Mesoamerica have been noted above. This cycle appears to be related to nine gods who ruled as "lords of the underworld" or who ruled "the nine underworlds".[149] This study proposes that a 9-day cycle symbolized in the initial narrative group of the Book of Mormon is the counterpart of the 20-day cycles symbolized in the initial narrative group of Third Nephi. As the number 20 could signify the birth of a human being, the number 9 could signify that being's entrance into the underworld(s) through death. At the time of $Mormon_2$'s engraving of the plates of Mormon, these cycles appear to have been counted daily for hundreds of years by Nephite priest-astronomers and perhaps for hundreds of years before that by other Mesoamerican priest-astronomers.

The number pattern of these nine number-terms in the Book of Mormon also appears to be symbolic. Only six of the nine temporal-expressions have stated number-terms; the other three have referenced or common number-terms that may be viewed as non-quantified. At either end of this list of nine number-terms, there are implied references to the birth of the mortal Messiah. In Mormon 1:2, the implied NC calendar year is the one suggested twice in the last verse of Fourth Nephi. The 320th NC calendar year ended, its record was closed, and the 321st year began. In Mormon 2:2, the time stated is the completion of the 326th year. The implication is that each of the related years, the ones that are said to have ended (320th and 326th) and the ones that are implied to have begun (321st and 327th), were measured from the same beginning point, the birth date of the Messiah. Between the two suggested New Year dates of the 321st and 327th NC calendar years, $Mormon_2$ placed six stated number-terms. The implied arithmetic is 321+6 = 327. These numbers also may suggest the number pattern (1+6 = 7 = 6+1), in which each number 1 is associated with a New Year that was unique and holy in the NC era. A 7-day week and a seventh holy day observance unique to the believers also may be implied.[150]

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[149] See Division 2, Part 2, Section 2.5.3 and Thompson, *Maya Hieroglyphic Writing: Introduction*, 208-12, 214.

[150] See Division 1, Part 1, Section 1.9.4.

3.8.3 Year-related events in Mormon$_2$'s early life

The examination of narrative-links accompanying Mormon$_2$'s concluding year-term letter pattern suggested that the narrative-links could be separated into two alternatively delimited, overlapping, letter-groups: (QTQ[T]QTQ) and (RQRQRQR[Q]RQRQRQR). The number-term Sets, Set-sums, and Set-contexts possibly associated with these letter patterns were detailed in Part 2 and Tables 2.I and 2.J of this Division.[151] Part 2 also proposed the importance of both the Messiah's birth date and Mormon$_2$'s birth date to the chronology presented in the Book of Mormon.[152] In a further step to analyze Mormon$_2$'s proposed personalization of his concluding record, Section 3.6 above suggested that his concluding narrative-link letter patterns seemed to identify dates important to his early life, including the date 6 Owl?, which appears to have been associated with the Messiah's birth and, more than nine years later, with the official inauguration of the NC era. Section 3.6 suggested further that Mormon$_2$'s narrative-link personalization included three separate dates implied in Mormon$_2$'s early life: his birth date, the date of his appointment as the new Nephite record keeper, and the date when he commenced his official duties in the land of Zarahemla. Mormon$_2$ appears to have coordinated these symbolic dates in his lifetime with dates he implied or described in the NC era and, thereby, he coordinated them with the Messiah's birth date and the inauguration of the NC era hundreds of years earlier. These events in Mormon$_2$'s early life are linked by the references to his age. Two later narratives also report that he was "visited of the Lord" when he was 15 years of age and that, in his 16th year, he became the leader of the Nephite armies. These events also are related to his birth date.

These implied or stated events (birth, priesthood appointment by Ammaron, commencement of official priesthood duties in the land of Zarahemla, vision of the Lord, and military appointment) may be considered in terms of their potential dates in a Mesoamerican 260-day calendar and in the NC calendar. The events and their potential day names may be indicated generally by the first and last of the nine temporal-expressions and their associated narratives. The first temporal-expression, the contextual statement of chronology in the beginning text of the Book of Mormon, is not precise. Mormon$_2$ was "about ten" sometime in the implied 321st NC calendar year when he was visited by Ammaron. The last or ninth temporal-expression in the initial narrative group of Mormon$_2$'s personal book describes him as "in [his] sixteenth year", i.e., 15 years old when he first led a Nephite army against the Lamanites. These temporal-expressions in the initial narrative group of the Book of Mormon seem to place Mormon$_2$'s birth "about ten years" before a point in the 321st NC calendar year and about 15 years before a point in the 326th NC calendar year. His ninth temporal-expression also appears to place his 15th birthday before the end of the 326th NC calendar year. Hence, he may have been born in the 310th or 311th NC calendar year. While it seems unlikely that he was born in the 312th NC calendar year, this possibility also is considered.

3.8.4 Potential birth date calendrical symbolism in the narrative-links

The Set consisting of the four number-terms associated with participial or T narrative-links in the alternatively delimited [T]-centered pattern (QTQ[T]QTQ) produces the Set-sum 396.[153] This Set includes all stated number-terms at their only and, therefore, maximum values. Hence,

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[151] See Division 3, Part 2, Sections 2.7.4 and 2.7.5.

[152] See Division 3, Part 2, Sections 2.3.4, 2.4.6, and 2.4.7.

[153] See Division 3, Part 2, Table 2.J.

this Set has no alternative Set-sum. Because the Set-sum 396 is more than 260, a simplifying calculation is required to reduce the remainder to a number less than 261: 396 – (1x260) = 136. The number 136 symbolizes the day name 6 Owl? in Figure 3.1 of Division 2. This day name has been proposed above as the day name of the Messiah's birth date and, more than nine years later, the official inauguration date of the NC era.[154]

When the Set is considered that consists of the 20 prepositional or Q narrative-links in the [T]-centered pattern (QTQ[T]QTQ), three alternative Set-sums may be indicated: 4280 (all stated number-terms at their maximum values); 5398 (all stated number-terms at their maximum values, plus the stated values implied by all referenced number-terms); and 5401 (all stated number-terms at their maximum values, plus the stated values implied by the referenced number-terms in Mormon 2:20; 3:7; and 4:17 and the hypothetical maximum values perhaps suggested by the three referenced number-terms in Mormon 1:8, 11; and 2:1).[155] These Set-sums and the day names in Figure 3.1 of Division 2, which they may symbolize, are calculated as follows.

4280 – (16x260) = 120 or 3.t or Lord
5398 – (20x260) = 198 or 3.r or Flint
5401 – (20x260) = 201 or 6.a or Sun

The Set consisting of the first ten number-terms associated with verbal or R narrative-links in the alternatively delimited [Q]-centered pattern (RQRQRQR[Q]RQRQRQR) produces the Set-sum 2522.[156] This Set includes all stated number-terms engraved by $Mormon_2$ at their maximum values. An 11th number-term (400) associated with an R narrative-link was added by his son many years after $Mormon_2$'s death. This last number-term in the plates of Mormon appears to have been added in accordance with $Mormon_2$'s commands; so, perhaps the alternative Set-sum 2922 must be considered. These Set-sums and the day names in Figure 3.1 of Division 2, which they may symbolize, are calculated as follows.

2522 – (9x260) = 182 or 13.b or Wind
2922 – (11x260) = 62 or 10.b or Wind

When the Set is considered that consists of the 19 prepositional or Q narrative-links in the [Q]-centered pattern (RQRQRQR[Q]RQRQRQR), another three alternative Set-sums may be indicated: 3960 (all stated number-terms at their maximum values); 5078 (all stated number-terms at their maximum values, plus the stated values implied by all referenced number-terms); and 5081 (all stated number-terms at their maximum values, plus the stated values implied by the referenced number-terms in Mormon 2:20; 3:7; and 4:17 and the hypothetical maximum values perhaps suggested by the three referenced number-terms in Mormon 1:8, 11; and 2:1).[157] Each of these three Set-sums is exactly 320 less than a Set-sum produced by the Set of Q narrative-links related to the alternatively delimited [T]-centered pattern (QTQ[T]QTQ). Because the [T]-centered pattern begins with the last temporal-expression in 4 Nephi 1:48, the number 320 provided by the associated number-term makes that Set of Q narrative-links produce larger Set-sums. The three smaller Set-sums and the day names in Figure 3.1 of Division 2, which they may symbolize, are reckoned as follows.

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[154] See Sections 3.5 and 3.6 above.

[155] See Division 3, Part 2, Table 2.J.

[156] See Division 3, Part 2, Table 2.I.

[157] Ibid.

3960 – (15x260) = 60 or 8.t or Lord
5078 – (19x260) = 138 or 8.r or Flint
5081 – (19x260) = 141 or 11.a or Sun

All eight day names potentially symbolized by Mormon$_2$'s engravings as part of the personalization of his record (3 Flint, 3 Lord, 6 Owl?; 6 Sun, 13 Wind, 8 Flint, 8 Lord, and 11 Sun) and a ninth day name made possible by his son's engravings (10 Wind) were examined regarding their locations in the 310th, 311th, and 312th NC calendar years (see Figures 3.1-3.3 of this Division). While it seemed unlikely that 6 Owl? also happened to be Mormon$_2$'s birth date, this study sought to make the data compilation as comprehensive as possible and the inclusion of 6 Owl? at this stage of the analysis permitted its comparison with the other birth dates. Thus, the generation of potential birth dates and subsequent annual birthdays also was carried out with respect to 6 Owl?. These nine day names appear 37 times as potential birth dates for Mormon$_2$ in the 310th, 311th, and 312th NC calendar years.

Day name and month designations			Gregorian date and Julian day number	
310 NC			*305-306 CE*	
3 Lord	19 H [NC]	8 I or K'ank'in [Tikal]	14 February	1832503
6 Owl?	15 I [NC]	4 J or Muwan [Tikal]	2 March	1832519
8 Flint	17 I [NC]	6 J or Muwan [Tikal]	4 March	1832521
11 Sun	0 J [NC]	9 J or Muwan [Tikal]	7 March	1832524
13 Wind	1 L [NC]	10 L or K'ayab' [Tikal]	17 April	1832565
3 Flint	17 L [NC]	6 M or K'umk'u [Tikal]	3 May	1832581
6 Sun	0 M [NC]	9 M or K'umk'u [Tikal]	6 May	1832584
8 Lord	19 R [NC]	3 A or Xul [Tikal]	2 September	1832703
10 Wind	1 A [NC]	5 A or Xul [Tikal]	4 September	1832705
3 Lord	19 C [NC]	3 D or Ch'en [Tikal]	1 November	1832763
6 Owl?	15 D [NC]	19 D or Ch'en [Tikal]	17 November	1832779
8 Flint	17 D [NC]	1 E or Yax [Tikal]	19 November	1832781
11 Sun	0 E [NC]	4 E or Yax [Tikal]	22 November	1832784
13 Wind	1 X [NC]	5 G or Kej [Tikal]	2 January	1832825
311 NC			*306 CE*	
3 Flint	12 G [NC]	1 H or Mak [Tikal]	18 January	1832841
6 Sun	15 G [NC]	4 H or Mak [Tikal]	21 January	1832844
8 Lord	14 M [NC]	3 X or Wayeb' [Tikal]	20 May	1832963
10 Wind	16 M [NC]	0 N or Pop [Tikal]	22 May	1832965
3 Lord	14 P [NC]	18 P or Sip [Tikal]	19 July	1833023
6 Owl?	10 Q [NC]	14 Q or Sotz' [Tikal]	4 August	1833039
8 Flint	12 Q [NC]	16 Q or Sotz' [Tikal]	6 August	1833041
11 Sun	15 Q [NC]	19 Q or Sotz' [Tikal]	9 August	1833044
13 Wind	16 A [NC]	0 B or Yaxk'in [Tikal]	19 September	1833085
3 Flint	12 B [NC]	16 B or Yaxk'in [Tikal]	5 October	1833101
6 Sun	15 B [NC]	19 B or Yaxk'in [Tikal]	8 October	1833104
312 NC			*307 CE*	
8 Lord	9 H [NC]	18 H or Mak [Tikal]	4 February	1833223
10 Wind	11 H [NC]	0 I or K'ank'in [Tikal]	6 February	1833225
3 Lord	9 K [NC]	18 K or Pax [Tikal]	5 April	1833283
6 Owl?	5 L [NC]	14 L or K'ayab' [Tikal]	21 April	1833299
8 Flint	7 L [NC]	16 L or K'ayab' [Tikal]	23 April	1833301
11 Sun	10 L [NC]	19 L or K'ayab' [Tikal]	26 April	1833304
13 Wind	11 N [NC]	15 N or Pop [Tikal]	6 June	1833345
3 Flint	7 O [NC]	11 O or Wo [Tikal]	22 June	1833361
6 Sun	10 O [NC]	14 O or Wo [Tikal]	25 June	1833364

Day name and month designations			Gregorian date and Julian day number	
312 NC			*307 CE*	
8 Lord	9 C [NC]	13 C or Mol [Tikal]	22 October	1833483
10 Wind	11 C [NC]	15 C or Mol [Tikal]	24 October	1833485
3 Lord	9 F [NC]	13 F or Sak [Tikal]	21 December	1833543

3.8.5 Analysis of the potential birthdays

To differentiate these 37 potential birth dates further, the assumed dates of $Mormon_2$'s ninth, tenth, 11th, 15th, and 16th birthdays were calculated. The assumption made regarding the birthdays was that they occurred in multiples of the 365-day calendar. The implied narrative arithmetic 11+4 = 15 personal years and 322+4 = 326 NC calendar years suggested the likelihood of this assumption. Hence, $Mormon_2$'s assumed ninth birthday occurred (9x365) or 3285 days after a potential birth date; his tenth birthday happened (10x365) or 3650 days after a potential birth date; his 11th birthday followed (11x365) or 4015 days after a potential birth date; his 15th birthday occurred (15x365) or 5475 days after a potential birth date; and his 16th birthday occurred (16x365) or 5840 days after a potential birth date. All 37 potential birth dates and the 185 derived potential birthdays are listed in Table 3.J of this Division.

The earliest potential birth date for $Mormon_2$ in the 310th NC calendar year is 3 Lord 19 H (14 February 305 CE). Starting the count of years from this date, the ninth and tenth birthdays would have been 12 Serpent 19 H 319 NC (12 February 314 CE) and 13 Foot 19 H 320 NC (12 February 315 CE), respectively. The ninth birthday is 691 days before the 321st NC calendar year began and the tenth birthday is 326 days before New Year 321 NC; so, as far as this potential birth date is concerned, it is impossible for the phrase *about ten years of age* in Mormon 1:2 to mean "almost ten, but still nine years of age". However, for the first 39 days in 321 NC, the phrase *about ten years of age* could mean "nearly eleven, but still ten years of age" and, for some reasonable number of days thereafter, the textual phrase might mean "eleven years of age, but just recently so". Was Ammaron able to complete his record of the 320th NC calendar year, identify a secret location where the sacred records could be hidden, load and transport them to that location, complete their burial, and travel to $Mormon_2$'s place of residence within the first two or three 20-day months of the 321st NC calendar year? Perhaps, but it may have taken longer than that. The 15th birthday associated with this earliest potential birth date is 5 Eagle 19 H 325 NC (11 February 320 CE). This date is 691 days before the 327th NC calendar year began. The potential 16th birthday, 6 Lord 19 H 326 NC (10 February 321 CE) is 326 days before New Year 327 NC. Did $Mormon_2$ go into battle relatively late in his 16th year of age (late December to early February)? There is apparently no text to contradict this scenario; so, it all may have happened this way.

The latest potential birth date for $Mormon_2$ in the 312th NC calendar year is 3 Lord 9 F (21 December 307 CE). Starting the count of years from this date, the ninth and tenth birthdays would have been 12 Serpent 9 F 321 NC (18 December 316 CE) and 13 Foot 9 F 322 NC (18 December 317 CE). The ninth birthday is 349 days after the 321st NC calendar year began, and the tenth birthday is 714 days after New Year 321 NC. $Mormon_2$ would have been eight years of age until the last few of weeks of the 321st NC calendar year. He could not have accurately described himself as "about ten years of age" when Ammaron hid the records. The 15th birthday is 5 Eagle 9 F 327 NC (17 December 322 CE). This birthday is 349 days after the 327th NC calendar year began; so, $Mormon_2$'s report of leading a Nephite army against the Lamanites in his 16th year and the implied timing of the conflict in the 326th NC calendar year combine to

contradict a birth date as late as 3 Lord 9 F 312 NC (21 December 307 CE). Indeed, this same textual contradiction applies to all 12 of the potential birth dates in 312 NC (nos. 13-17 and 31-37 in Table 3.J). Due to this contradiction, these 12 birth dates are not considered further.

Another 11 of the conceivable birth dates seem highly unlikely to have been Mormon$_2$'s birth date. Six of these birth dates (nos. 4, 8, 12, 19, 24, and 29 in Table 3.J) use the hypothetical values perhaps suggested by the three referenced number-terms in Mormon 1:8, 11; and 2:1. The hypothetical values were not engraved by Mormon$_2$. They are dependent on the reader's "correction" of the grammar and substitution of hypothetical ordinal number values for Mormon$_2$'s stated cardinal values. The proposed personalization of Mormon$_2$'s record seems highly unlikely to have been designed to rely on the uncertainty of a reader's then-current English grammar and substitutions. Hence, the six potential birth dates that are based on hypothetical values rather than engraved numbers also are not considered further.

Two other potential birth dates (nos. 22 and 27 in Table 3.J) use the final number-term (400) added by Moroni$_2$ some 15 years after Mormon$_2$'s death. This number-term also was not engraved by Mormon$_2$. Even though he appears to have commanded Moroni$_2$ to survive and engrave this number-term, Mormon$_2$ could not assume that these events would occur. Mormon$_2$'s proposed personalization also seems highly unlikely to have been designed to rely on the assumption of Moroni$_2$'s survival and engraving of the plates. These two potential birth dates also are not considered in the following analysis.

The other three conceivable birth dates that seem highly unlikely to have been Mormon$_2$'s birth date (nos. 2, 6, and 10 in Table 3.J) are potential 6 Owl? birth dates. Nothing about the suggested birthdays following a potential 6 Owl? birth date for Mormon$_2$ distinguishes them in any significant way from the other suggested birthdays following any of the other more likely potential birth dates. Indeed, the 6 Owl?, 8 Flint, and 11 Sun birth dates listed in the table are sometimes just two or three days apart and the associated narratives do not provide sufficient details to differentiate them from each other. More to the point, Mormon$_2$ appears to have relied on two birth dates to initiate, structure, and equate the official and personal chronologies of his early years. Nothing in the text requires the two birth dates to have the same day name. Theoretically, his birth date could have had one of the other 259 ritual almanac day names. Thus, this study assumes that 6 Owl? is the day name of the Messiah's birth date, but not the day name of Mormon$_2$'s birth date.

The remaining 14 potential birth dates in Table 3.J are neither contradicted by the text nor do they rely on Sets including Moroni$_2$'s or a reader's uncertain contributions, and none of them suggest the day name 6 Owl? for Mormon$_2$'s birth date. These 14 potential birth dates and their 70 related birthdays, examined one birth date at a time, seem to present closely related chronological scenarios for Mormon$_2$'s early years that are more or less likely depending on the further assumptions one is willing to make, particularly those related to the other dates and intervals mentioned in the initial narrative group of the Book of Mormon. The 14 scenarios and 84 dates seem to be just another layer of a large chronological "Gordian knot" that needs a text-based "sword" to cut the knot.

3.8.6 The principle of consistency

The handle of the textual "sword" is the rational interpretative principle of consistency.[158] $Nephi_1$, in composing his small plates, appears to have consistently organized his creation, quotation, and placement, of year-related expressions to create a symbolic contrast between political and prophetic powers. $Mormon_2$'s final year-term letter-groups (ABABA)(BABABA)(BABAB) clearly honor $Nephi_1$'s consistent, pains-taking work, and represent the alternatively delimited, overlapping, year-term letter patterns designed by $Nephi_1$ for the small plates. Furthermore, $Mormon_2$'s own pains-taking work with the related narrative-links suggests his personal, alternatively delimited, overlapping, narrative-link letter patterns. His patterns are more complex than $Nephi_1$'s because $Mormon_2$ uses three types of narrative-links, rather than just two types of year-terms, for his personalizing patterns. Nonetheless, an application of the principle of consistency within each author's work and between their respective works yields interpretative insight. $Mormon_2$'s life, as detailed in his brief year-related narratives, reflects his grasp of $Nephi_1$'s contrasting powers and his own choice to be faithful to his prophetic source.

The blade of the "sword" appears to be provided in the text of $Mormon_2$'s earlier book, Third Nephi, with its crucial and instructive Set-sums 1089, 1177, 1181, 1269, 2266, and 2450. These six Set-sums not only imply a specific chronological context (ancient Mesoamerican calendars, spring equinoxes, summer solstices, and eclipse seasons) for the day name 6 Owl?, but they suggest that it describes the proposed birth date of the Messiah and the inauguration date of the NC era during the tenth NC calendar year. The day name 6 Owl? has been included in Table 3.J for the purpose of birthday comparison. However, none of the other potentially symbolized day names of alternative birth dates (3 Flint, 3 Lord, 6 Sun, 8 Flint, 8 Lord, 10 Wind, 11 Sun, and 13 Wind) suggests a reasonable alternative to 6 Owl? with respect to the crucial Set-sums in the initial narrative group of Third Nephi and the Messiah's birth date. Thus, this study proposes that the Set-sum 396 of $Mormon_2$'s participial or T narrative-link Set in the [T]-centered pattern (QTQ[T]QTQ) implies the Messiah's birth date and does not imply $Mormon_2$'s birth date.

The principle of consistency then suggests three interpretative possibilities for the other three narrative-link Sets. First, the verbal or R narrative-links (the other non-Q narrative-links) in the alternatively delimited [Q]-centered pattern (RQRQRQR[Q]RQRQRQR) may produce a Set and Set-sum implying $Mormon_2$'s birth date. Second, the 20 prepositional or Q narrative-links in the [T]-centered pattern may produce such a Set and Set-sum. Third, the 19 prepositional or Q narrative-links in the [Q]-centered pattern may produce a Set and Set-sum implying $Mormon_2$'s birth date. Which of these three interpretative possibilities appears to be most consistent or closely matched with the characteristics of the T-based Set?

Characteristics of the T-based Set in the [T]-centered pattern

The following characteristics define the T-based Set:

1. This Set is based on all the participial or T narrative-links that accompany the concluding year-related expressions in the plates of Mormon.
2. This Set includes only stated number-terms.
3. All such number-terms were engraved by $Mormon_2$ in the Book of Mormon.

[158] See Division 10, Part 1, "Rational Interpretation of the *Book of Mormon*".

4. The cardinal numbers stated in such number-terms add to the maximum Set-sum possible for such number-terms (396).
5. The Set-sum 396, after a simplifying calculation [396 – (1x260) = 136], implies the day name 6 Owl?.

Characteristics of the Q-based Set in the [Q]-centered pattern

The following characteristics define the Q-based Set in the [Q]-centered pattern:

1. This Set is based on all but one of the prepositional or Q narrative-links that accompany the concluding year-related expressions in the plates of Mormon. The Q narrative-link in Fourth Nephi is disregarded because it precedes the first verbal or R narrative-link in the [Q]-centered pattern.
2. This Set includes both stated number-terms and referenced number-terms.
3. All such number-terms were engraved by $Mormon_2$ in the Book of Mormon.
4. The cardinal numbers stated or implied in the stated number-terms add to the Set-sum 3960. The cardinal numbers stated or implied in both the stated and referenced number-terms add to the maximum Set-sum possible for such number-terms (5078). (Hypothetical values are disregarded.)
5. The Set-sum 3960, after a simplifying calculation [3960 – (15x260) = 60], implies the day name 8 Lord. The Set-sum 5078, after a simplifying calculation [5078 – (19x260) = 138], implies the day name 8 Flint.

Characteristics of the Q-based Set in the [T]-centered pattern

The following characteristics define the Q-based Set in the [T]-centered pattern:

1. This Set is based on all the prepositional or Q narrative-links that accompany the concluding year-related expressions in the plates of Mormon.
2. This Set includes both stated number-terms and referenced number-terms.
3. All such number-terms were engraved by $Mormon_2$ in Fourth Nephi and the Book of Mormon.
4. The cardinal numbers stated or implied in the stated number-terms add to the Set-sum 4280. The cardinal numbers stated or implied in both the stated and referenced number-terms add to the maximum Set-sum possible for such number-terms (5398). (Hypothetical values are disregarded.)
5. The Set-sum 4280, after a simplifying calculation [4280 – (16x260) = 120], implies the day name 3 Lord. The Set-sum 5078, after a simplifying calculation [5078 – (19x260) = 138], implies the day name 3 Flint.

Characteristics of the R-based Set in the [Q]-centered pattern

The following characteristics define the R-based Set in the [Q]-centered pattern:

1. This Set is based on all but one of the verbal or R narrative-links that accompany the concluding year-related expressions in the plates of Mormon. The final R narrative-link is disregarded because it was added by $Moroni_2$ some 15 years after his father's death.
2. This Set includes only stated number-terms.

3. All such number-terms were engraved by $Mormon_2$ in the Book of Mormon.
4. The cardinal numbers stated in such number-terms add to the maximum Set-sum possible for such number-terms (2522).
5. The Set-sum 2522, after a simplifying calculation [2522 – (9x260) = 182], implies the day name 13 Wind.

Based on these characteristics, the R-based Set in the [Q]-centered pattern appears to have been designed to be most like the T-based Set in the [T]-centered pattern. The (T) letter-sets are interwoven with (Q) letter-sets in the [T]-centered pattern and the (R) letter-sets are interwoven with (Q) letter-sets in the [Q]-centered pattern. Both the R-based Set and the T-based Set include just stated number-terms engraved by $Mormon_2$ in the Book of Mormon. The only caveat noted is that $Moroni_2$ later engraved a final verbal or R narrative-link and number-term (400) in his father's book. However, that number-term is disregarded because it is based on events that occurred after $Mormon_2$'s death. The proposed R-based Set includes every one of the number-terms that $Mormon_2$ chose to engrave in his personal record. Finally, both the R-based Set and the T-based Set produce a single implied birth date. The Q-based Sets each potentially produce two implied birth dates and there does not seem to be a suggested protocol for choosing which one of the four relates to $Mormon_2$'s birth date. Presumably, these four implied day names do not describe his birth date.

The marked difference between the simple T- and R-based Sets and the Q-based Sets with their referenced number-terms appears to suggest that 13 Wind is the day name to be associated with $Mormon_2$'s birth date. A chronological scenario that begins $Mormon_2$'s early years with a 13 Wind birth date seems much more likely than scenarios that begin with a 3 Flint, 3 Lord, 8 Flint, or 8 Lord birth date. Clearly, 3 Flint, 3 Lord, 8 Flint, and 8 Lord are derived in ways that exhibit at least some consistency with the proposal of $Mormon_2$'s personalization, with his emphasis on time measured from his birth date or from the Messiah's birth date, with the implied origin of 6 Owl? for the NC era in the initial narrative group of Third Nephi, and/or with the reiteration of 6 Owl? in the [T]-centered Set of the Book of Mormon. Thus, at this point of the investigation, 3 Flint, 3 Lord, 8 Flint, and 8 Lord cannot be eliminated from further consideration. They are not like the 6 Sun, 10 Wind, and 11 Sun potential day names initially noted above, which have been eliminated from further consideration because they rely on Sets that include $Moroni_2$'s or a reader's then-future contributions. Nor are they like $Mormon_2$'s potential 3 Flint, 3 Lord, 8 Flint, 8 Lord, and 13 Wind birth dates in 312 NC, which have been eliminated from consideration because of their placement of his 15th birthdate in 327 NC, a placement that is contradicted in the text. The analysis must examine additional relevant data related to the 14 potential 3 Flint, 3 Lord, 8 Flint, 8 Lord, and 13 Wind birth dates and their implied birthdays.

3.8.7 $Mormon_2$'s earliest events specified by his age

The discussion above and the data in Table 3.J indicate that there is interplay between a proposed birth date for $Mormon_2$ and his implied birthdays that must be considered in the analysis of the proposed personalization of his record. However, potential birth dates and implied birthdays are not the only aspects of $Mormon_2$'s earliest recorded years that have relevant chronological implications. When $Mormon_2$ was "about ten", he was appointed to be the fifth generation Nephite record keeper and he was entrusted with information about the location of the

hidden Nephite records. After he was 11 years old, he traveled to the land of Zarahemla, apparently to be officially recognized and installed in office, and to undertake the duties and training associated with his priesthood appointment. Sometime during his 12th year, a war began on one of Zarahemla's borders with the Lamanites, but the Nephites prevailed in "a number of battles" and the Lamanites apparently withdrew before $Mormon_2$'s 12th birthday.[159] The day names of these crucial events also may be symbolized by the alternative Set-sums associated with the [T]-centered and [Q]-centered letter-groups.

Table 3.K of this Division lists each of the possible combinations of Sets within the [T]-centered and [Q]-centered patterns, in harmony with the assumption that the T-based Set in the [T]-centered pattern presents the day name 6 Owl? as the birth date of the Messiah. The combinations in Table 3.K are then converted into the possible dates listed in Table 3.L, all of which assume a 6 Owl? day name for the proposed 5 BCE birth date of the Messiah and for the proposed first day of the first NC calendar year. The dozens of possible event dates in Table 3.L add layers of complexity to the chronological "Gordian knot" of $Mormon_2$'s proposed personalization. Moreover, the data in Tables 3.J, 3.K, and 3.L are subject to further consideration when the related data of $Mormon_2$'s 16th year are considered. The "Gordian knot" has not yet been fully described.

3.8.8 $Mormon_2$'s later events specified by his age

Three more events in $Mormon_2$'s early life are mentioned in the initial narrative group of the Book of Mormon. After his 15th birthday but before the end of the 326th NC calendar year, he was "visited of the Lord", another war began with the Lamanites, and he was "appointed" to be "the leader of [the Nephite] armies". Because of that military appointment, $Mormon_2$ "did go forth at the head of an army of the Nephites against the Lamanites".[160] Are the vision, start of war, and military appointment also symbolized by their day names? If the answer is "no", one must question the inconsistency. Why are his priesthood appointment by Ammaron and later installation in Zarahemla apparently symbolized, but his vision of the Lord and military appointment are not symbolized? Why are dates for the start and end of the war in his 12th year apparently symbolized by day names, but the date for the start of the war in his 16th year is not symbolized by a day name? If the answer is "yes, their day names are symbolized", one must determine what the source of these additional day names could be. Are they also alternate day names symbolized by the Q-based Sets, or is their source one Set with alternate Set-sums, or two or three Sets with singular Set-sums existing elsewhere in the Book of Mormon?

The proposal of this study is that $Mormon_2$ personalized the record of his early years, not only as to day names related to his birth, his priesthood appointment, his assumption of priesthood duties in the land of Zarahemla, and the war in his 12th year, but also as to his vision and military appointment, and the wars that began in his 16th year. But where are there Sets in the Book of Mormon that could suggest such dates? How could they be identified and interpreted?

Again, this study proposes that the "sword" of Third Nephi, the personalization related to the Messiah's birth date and the implied date of the NC era inauguration, suggests answers to these questions and provides a consistent pattern for $Mormon_2$'s personalization in the initial

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[159] Mormon 1:2-12.

[160] Mormon 1:13-2:2.

narrative group of the Book of Mormon. The initial narrative groups of Third Nephi and the Book of Mormon are closely connected. In Third Nephi, all the number-terms in the initial narrative group leading up to the inauguration of the NC era produced the crucial Set-sums 2266 (all stated number-terms) and 2450 (all stated and quantified referenced number-terms). Consistent with those interpretations, the "sword" of Third Nephi suggests that all the number-terms in the initial narrative group of the Book of Mormon leading up to the listing of the first quantified NC calendar year also produce two crucial Set-sums that symbolize the day names of $Mormon_2$'s vision and military appointment and imply the day name when the war began in his 16th year.

The relevant number-terms, values, and Set-sums in the initial narrative group of the Book of Mormon may be illustrated as follows: 10+24+11+[□ or 11]+[□ or 11]+4+15+[□ or 15]+16 = 80 or [117].[161] In this Set, a non-quantified interpretation of a referenced number-term is signified by a square box. Brackets are placed around the alternative interpretations of a referenced number-term and around the Set-sum that includes the quantified referenced number-terms. Thus, consistent with the "sword" of Third Nephi, a single Set appears in the Book of Mormon, and it produces the alternative Set-sums 80 and 117. In a sequence of cardinal numbers, 80 occurs first and 117 occurs next. However, as a symbol of a possible day name, the number 117 represented by its symbolized day name may appear in the 326th NC calendar year more than once or before the day name symbolized by the number 80. Clearly, the interpretations to be assigned to the numbers 80 and 117 require a detailed analysis within the proposed context of both $Mormon_2$'s 16th year of age and the 326th NC calendar year.

If the alternate Set-sums 80 and 117 represent day names depicted by those numbers in the ritual almanac shown in Figure 3.1 of Division 2, then they respectively symbolize the day names 2 Lord and 13 Quake. The day name 2 Lord appears once in 325 NC and once in 326 NC, but the day name 13 Quake appears twice in 325 NC and once in 326 NC. The calendars for these two years are depicted in Figures 3.7 and 3.8 of this Division. The five associated dates are listed below. However, only the latter four dates occur between $Mormon_2$'s more likely 15th and 16th birthdays in those years. The "A" alternative in Table 3.M depicts the four relevant dates.

13 Quake [1 H 325 NC] 24 January 320 CE (1837960)
2 Lord [4 A 325 NC] 3 September 320 CE (1838183)
13 Quake [1 C 325 NC] 10 October 320 CE (1838220)
2 Lord [19 M 326 NC] 21 May 321 CE (1838443)
13 Quake [16 O 326 NC] 27 June 321 CE (1838480)

The assumption that the Set-sums 80 and 117 may be determined from the day name 1 Sun as a first day name differs from the assumption about the Third Nephi Set-sums 2266 and 2450 proposed above. The Set-sums 2266 and 2450 in Third Nephi were interpreted as intervals measured from the Messiah's birth date, rather than as symbols of day names linked to the numbers in Figure 3.1 of Division 2 and only secondarily associated with that birth. Hence, the principle of consistency may suggest that the day names 2 Lord and 13 Quake are derived in a way that is inconsistent with the derivation and meanings of the Set-sums 2266 and 2450 in Third Nephi. To be consistent with Third Nephi, the Set-sums 80 and 117 probably should be considered to represent intervals measured from the same specific date. The issue then is how to identify the specific date in the text where the intervals begin.

[161] Mormon 1:2, 3, 6, 8, 11-12, 15; 2:1-2.

One possibility is to assume that the starting date is the day name of the Messiah's birth date (day 6 Owl? or 136 in Figure 3.1 of Division 2). That is the starting date for the Set-sum 2266 and 2450 in Third Nephi. The symbolized 80th and 117th day names in the Book of Mormon could then be identified as follows: 7 Eagle (136+79 = 215 or 7.o) and 5 Jaw (136+116 = 252 or 5.l). In the 325th NC calendar year (Figure 3.7 of this Division), 7 Eagle and 5 Jaw occur once each. In the 326th NC calendar year (Figure 3.8 of this Division), 7 Eagle and 5 Jaw occur twice each. The related dates are listed below and as part of the "B" alternative in Table 3.M. When placed between $Mormon_2$'s potential 15th and 16th birthdays, they may be identified as follows.

7 Eagle [19 L 325 NC] 1 May 320 CE (1838058)
5 Jaw [16 N 325 NC] 7 June 320 CE (1838095)
7 Eagle [14 G 326 NC] 16 January 321 CE (1838318)
5 Jaw [11 I 326 NC] 22 February 321 CE (1838355)
7 Eagle [14 B 326 NC] 3 October 321 CE (1838578)
5 Jaw [11 D 326 NC] 9 November 321 CE (1838615)

Which combination of these dates, if any, may have been intended? The answer does not appear to be indicated in the text. However, the more critical problem with the assumed 6 Owl? starting day name is that the Set-sums 2266 and 2450 in the initial narrative group of Third Nephi relate to the Messiah's birth date, which is one of the principal chronological topics there, but in the initial narrative group of the Book of Mormon, the principal chronological topics relate to the birth date of $Mormon_2$. Thus, it seems inconsistent for $Mormon_2$ to personalize his record by measuring time from the day name of the Messiah's birth date some three centuries earlier, rather than from the day name of his own birth date or some other more contemporaneous event.

The consideration of two separate birth dates implied in the Book of Mormon suggests another possible assumption for the starting date. The Set-sums 80 and 117 may be viewed as intervals that start on $Mormon_2$'s most recent (i.e., 15th) birthday. The temporal-expressions of his initial narrative group mention that he was 15 years of age, refer to that age again, and then mention that he was still in his 16th year of age when he went to war.[162] This repetition may suggest the importance of his 15th birthday in this part of the chronology of his early years. The identified day names of his potential birth date and the possibly related 15th birthdays in 325 and 326 NC, as listed in Table 3.J, produce the following possible dates for $Mormon_2$'s vision (15th birthday+79 days) and military appointment (15th birthday+116 days). These possibilities are listed as part of the "C" alternative in Table 3.M.

Birth dates	15th birthday, vision and military appointment dates
8 Lord (60)	15th birthday: 10 Eagle [19 R 325 NC] 29 August 320 CE (1838178) Vision: 11 Jaguar [18 D 325 NC] 16 November 320 CE (1838178+79 = 1838257 Appointment: 9 Monkey [15 F 325 NC] 23 December 320 CE (1838178+116 = 1838294)
	15th birthday: 10 Eagle [14 M 326 NC] 16 May 321 CE (1838438) Vision: 11 Jaguar [13 Q 326 NC] 3 August 321 CE (1838438+79 = 1838517) Appointment: 9 Monkey [10 A 326 NC] 9 September 321 CE (1838438+116 = 1838554)
3 Lord (120)	15th birthday: 5 Eagle [19 H 325 NC] 11 February 320 CE (1837978) Vision: 6 Jaguar [18 L 325 NC] 30 April 320 CE (1837978+79 = 1838057) Appointment: 4 Monkey [15 N 325 NC] 6 June 320 CE (1838438+116 = 1838094) 15th birthday: 5 Eagle [19 C 325 NC] 28 October 320 CE (1838238) Vision: 6 Jaguar [13 G 326 NC] 15 January 321 CE (1838238+79 = 1838317) Appointment: 4 Monkey [10 I 326 NC] 21 February 321 CE (1838238+116 = 1838354)
	15th birthday: 5 Eagle [14 P 326 NC] 15 July 321 CE (1838498)

[162] Mormon 1:15-2:2.

3 Lord (120)	15th birthday: 5 Eagle [19 H 325 NC] 11 February 320 CE (1837978) Vision: 6 Jaguar [13 B 326 NC] 2 October 321 CE (1838498+79 = 1838577) Appointment: 4 Monkey [10 D 326 NC] 8 November 321 CE (1838498+116 = 1838614)
8 Flint (138)	15th birthday: 10 Cane [17 I 325 NC] 29 February 320 CE (1837996) Vision: 11 Jaw [16 M 325 NC] 18 May 320 CE (1837996+79 = 1838075) Appointment: 9 Water [13 O 325 NC] 24 June 320 CE (1837996+116 = 1838112)
	15th birthday: 10 Cane [17 D 325 NC] 15 November 320 CE (1838256) Vision: 11 Jaw [11 H 326 NC] 2 February 321 CE (1838256+79 = 1838335) Appointment: 9 Water [8 J 326 NC] 11 March 321 CE (1838256+116 = 1838372)
	15th birthday: 10 Cane [12 Q 326 NC] 2 August 321 CE (1838516) Vision: 11 Jaw [11 C 326 NC] 20 October 321 CE (1838516+79 = 1838595) Appointment: 9 Water [8 E 326 NC] 26 November 321 CE (1838516+116 = 1838632)
13 Wind (182)	15th birthday: 2 Quake [1 L 325 NC] 13 April 320 CE (1838040) Vision: 3 Owl? [0 P 325 NC] 1 July 320 CE (1838040+79 = 1838119) Appointment: 1 Cane [17 Q 325 NC] 7August 320 CE (1838040+116 = 1838156)
	15th birthday: 2 Quake [1 X 325 NC] 29 December 320 CE (1838300) Vision: 3 Owl? [15 J 326 NC] 18 March 321 CE (1838300+79 = 1838379) Appointment: 1 Cane [12 L 326 NC] 24 April 321 CE (1838300+116 = 1838416)
	15th birthday: 2 Quake [16 A 326 NC] 15 September 321 CE (1838560) Vision: 3 Owl? [15 E 326 NC] 3 December 321 CE (1838560+79 = 1838639) Appointment: 1 Cane [7 G 327 NC] 9 January 322 CE (1838560+116 = 1838676)
3 Flint (198)	15th birthday: 5 Cane [17 L 325 NC] 29 April 320 CE (1838056) Vision: 6 Jaw [16 P 325 NC] 17 July 320 CE (1838056+79 = 1838135) Appointment: 4 Water [13 R 325 NC] 23 August 320 CE (1838056+116 = 1838172)
	15th birthday: 5 Cane [12 G 326 NC] 14 January 321 CE (1838316) Vision: 6 Jaw [11 K 326 NC] 3 April 321 CE (1838316+79 = 1838395) Appointment: 4 Water [8 M 326 NC] 10 May 321 CE (1838316+116 = 1838432)
	15th birthday: 5 Cane [12 B 326 NC] 1 October 321 CE (1838576) Vision: 6 Jaw [11 F 326 NC] 19 December 321 CE (1838576+79 = 1838655) Appointment: 4 Water [3 H 327 NC] 25 January 322 CE (1838576+116 = 1838692)

The principal difficulty with the foregoing dates is that, as much as the crucial events of Mormon$_2$'s 16th year of age are emphasized, the use of his 15th birthday as the starting date of the 80-day and 117-day intervals is still inconsistent with Third Nephi. The 6 Owl? starting date for the Set-sums 2266 and 2450 was not a birthday of the Messiah; it was the date of his birth into mortality, which eventually (more than nine years later) was reckoned as the first day of the first NC calendar year. Hence, a derivation of day names that may be more consistent with that of the Third Nephi Set-sums is to assume that the Set-sums 80 and 117 represent intervals having Mormon$_2$'s date of birth as the starting date. Using the five potential day names identified in Section 3.8.6 above and Table 3.J of this Division as starting points for the calculations, this approach to understanding the Set-sums 80 and 117 produces the following possible dates for Mormon$_2$'s vision (birth date+79 days) and military appointment (birth date+116 days). These possibilities are listed as part of the "D" alternative in Table 3.M.

Birth dates	Vision and military appointment dates
8 Lord (60)	9 Rain (60+79 = 139) [3 D 325 NC] 1 November 320 CE (1838242) 7 Owl? (60+116 = 176) [0 F 325 NC] 8 December 320 CE (1838279) 9 Rain (139) [18 P 326 NC] 19 July 321 CE (1838502) 7 Owl? (176) [15 R 326 NC] 25 August 321 CE (1838539)
3 Lord (120)	6 Owl? (120+116 = 136) [0 I 325 NC] 12 February 320 CE (1837979) 4 Rain (120+79 = 199) [3 L 325 NC] 15 April 320 CE (1838042) 6 Owl? (136) [0 D 325 NC] 29 October 320 CE (1838239)

3 Lord (120)	6 Owl? (120+116 = 136) [0 I 325 NC] 12 February 320 CE (1837979) 4 Rain (199) [3 X 325 NC] 31 December 321 CE (1838302) 6 Owl? (136) [15 P 326 NC] 16 July 321 CE (1838499) 4 Rain (199) [18 A 326 NC] 17 September 321 CE (1838562)
8 Flint (138)	9 Quake (138+79 = 217) [1 M 325 NC] 3 May 320 CE (1838060) 7 Jaguar (138+116 = 254) [18 N 325 NC] 9 June 320 CE (1838097) 9 Quake (217) [16 G 326 NC] 18 January 321 CE (1838320) 7 Jaguar (254) [13 I 326 NC] 24 February 321 CE (1838357) 9 Quake (217) [16 B 326 NC] 5 October 321 CE 1838580) 7 Jaguar (254) [13 D 326 NC] 11 November 321 CE 1838617)
13 Wind (182)	1 Sun (182+79 = 261 = 260+1) [0 J 326 NC] 3 March 321 CE (1838364) 12 Flint (182+116 = 298 = 260+38) [17 K 326 NC] 9 April 321 CE (1838401) 1 Sun (1) [0 E 326 NC] 18 November 321 CE (1838624) 12 Flint (38) [17 F 326 NC] 25 December 321 CE (1838661)
3 Flint (198)	4 Quake (198+79 = 277 = 260+17) [1 P 325 NC] 2 July 320 CE (1838120) 2 Jaguar (198+116 = 314 = 260+54) [18 Q 325 NC] 8 August 320 CE (1838157) 4 Quake (17) [16 J 326 NC] 19 March 321 CE (1838380) 2 Jaguar (54) [13 L 326 NC] 25 April 321 CE (1838417) 4 Quake (17) [16 E 326 NC] 4 December 321 CE (1838640)

While the foregoing 25 potential dates appear to be consistent with the Third Nephi Set-sums, which were apparently designed to be measured from the Messiah's birth date, there is no clear connection with the NC era like there is with the Third Nephi Set-sums. After the NC era was officially established (apparently on a 6 Owl? summer solstice inauguration date), the Third Nephi Set-sums 2266 and 2450 also could be understood as being reckoned from the first day of the first NC calendar year. The 326th NC calendar year is the first one that Mormon$_2$ identifies with a stated number in the Book of Mormon and he specifies its year end. Hence, a fifth possibility is to view the Set-sums 80 and 117 as intervals that start with the first day/New Year/year bearer date of the 326th NC calendar year. This alternative may identify both specific dates associated with his vision and military appointment in that year. The 80th and 117th days of 326 NC are 7 Lord [19 J] 22 March 321 CE (1838383) and 5 Quake [16 L] 28 April 321 CE (1838420). These two dates are listed as part of the "E" alternative in Table 3.M.

All 154 seemingly possible dates of Mormon$_2$'s vision and military appointment in 325 and/or 326 NC are listed in Table 3.M, together with the various assumed birth dates of Mormon$_2$, his potential 15th and 16th birthdays, and the New Year dates of the 326th and 327th NC calendar years. Figures 3.1 through 3.8 of this Division depict the 310th, 311th, 312th, 320th, 321st, 322nd, 325th and 326th NC calendar years, which appear to be the ones most likely related to Mormon$_2$'s birth date, the other events in his early life that are mentioned in the initial narrative group of the Book of Mormon, and his implied birthdays.[163] All the possible event dates in Table 3.M may be thought to add even more layers of complexity to the chronological "Gordian knot" of Mormon$_2$'s proposed personalization.

3.8.9 Wars with the Lamanites

The final year-related narratives that may bear on the chronology of Mormon$_2$'s early years are his reports of wars that commenced in his 12th and 16th years of age. He states that "in this

[163] Because these NC calendar years occurred more than 300 years after the proposed birth date of the Messiah, the protocols that may have governed the Nephite identification and/or observation of equinoxes and solstices are unknown. In Figures 3.1 through 3.8, each calculated equinox or solstice date is based on the computations of the GISS calculation tool accessed on the NASA website, rather than on the following date in which the sunrise and/or sunset observations could have been deemed certain. See data.giss.nasa.gov/modelE/ar5plots/srvernal.html.

year", i.e., when he was "being eleven years old" and "carried" to the land of Zarahemla, "there began to be a war between … the Nephites and Lamanites".[164] The Nephites appear to have driven the Lamanites back to the borders of the land of Zarahemla during that year and a four-year period of peace commenced. Then, when $Mormon_2$ was 15 years old, "in that same year there began to be a war again between the Nephites and Lamanites". At this time, he received his appointment to command the Nephite armies and he went into battle at the forefront of an army against the Lamanites.[165] The timing of these two wars, of the battles in the following three years, and of the great battle involving tens of thousands of troops in the 330th NC calendar year are considered in a later Part of this Division. However, the timing of a territorial war in a Mesoamerican context is noted here because it may have some bearing on the timing of $Mormon_2$'s military appointment and initiation into battle. Again, this suggestion is based on the previous analysis of the initial narrative group of Third Nephi, where the Set-sums 2266 and 2450 appeared to have distinct chronological meanings within a Mesoamerican calendrical and astronomical context.

The dry season in Mesoamerica generally begins in November and the principal harvest is carried out from mid-November through mid-December. In some areas, a winter sowing takes place in January for crops that may be harvested in May and June. However, the long dry season of the year extends from November into May, which is often the hottest and driest time of all. In late May or early June, the rainy season begins, and this is the time for planting the principal crops. In late July and early August, a brief dry season occurs, but September usually is the month of greatest rainfall. The crops mature in October and the principal harvest begins in November. Naturally, local geographic features and their altitudes, and weather anomalies may alter this general seasonal pattern. The time for major warfare apparently occurred during the dry season, after the harvest had been largely completed and the armies had been mustered in January, and before the principal crops had to be planted in late May and early June.[166] Of course, this general timing of major warfare could be modified on the basis of local political motivations, superstitions, and many other factors.

A generalized expectation for $Mormon_2$'s military appointment and initial battle may be that they occurred during the season of major warfare, between late January and early May. The potential military appointment dates listed in Table 3.M of this Division suggest two observations. First, nine possible birth dates for $Mormon_2$ (eight in 310 NC and the earliest one in 311 NC) result in potential appointment dates in the warfare season of 326 NC and before his 16th birthday. Second, the other five of the possible birth dates for $Mormon_2$ (all in 311 NC) do not result in potential appointment dates in the warfare season of 326 NC and/or before he turned 16 years of age. These results may suggest that $Mormon_2$'s birth date occurred on or between 14 February 305 CE (2nd month, 310 NC) or 18 January 306 CE (1st month, 311 NC).

3.9 The proposed chronology of $Mormon_2$'s early life

Of the 14 possible birth dates listed in Table 3.M, only one (13 Wind) begins a chronological scenario that appears to be wholly consistent with the initial narrative group of

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[164] Mormon 1:5-9.

[165] Mormon 2:1.

[166] E.g., Ignacio Bernal, *The Olmec World*, trans. Doris Heyden and Fernando Horcasitas (Berkeley: University of California Press, 1969), 21-22; Coe, *Breaking the Maya Code*, 56-57; Milbrath, *Star Gods of the Maya*, 12-13; idem, "Maya Astronomical Observations and the Agricultural Cycle", 497-98; Schele and Freidel, *A Forest of Kings*, 61-62.

Third Nephi, that exhibits astronomical and calendrical connections that may have been significant in Nephite astronomical and calendrical settings, and that places $Mormon_2$'s military appointment in a Mesoamerican warfare season in 326 NC. The "sword" of Third Nephi slices through the hundreds of dates in the "Gordian knot" of possibilities and results in the following proposed scenario for $Mormon_2$'s birth and early years. The 13 Wind birth date on 2 January 306 CE is proposed as the birth date of $Mormon_2$. This birth date and the following dates of relevant birthdays and early life events may be described in their chronological order and with the textual sourcing of their symbolism as follows.

Birth: 13 Wind [1 X 310 NC] 2 January 306 CE (1832825)

- $Mormon_2$'s concluding year-term letter-groups (ABABA)(BABABA)(BABAB) end his writings in the plates of $Mormon_2$ and prepare his readers for the alternatively delimited, overlapping, symbolic, year-term letter groups that his ancestor $Nephi_1$ created for the small plates of Nephi. $Mormon_2$ attached the small plates of Nephi to the plates of Mormon, so that they followed $Mormon_2$'s last book in the collection of plates.
- $Mormon_2$ created his own alternatively delimited, overlapping, symbolic, narrative-link letter-groups to connect his concluding year-term letter-groups to their associated narratives. His alternatively delimited letter-groups use three linguistic types of narrative-links and separate them into two letter patterns: (QTQ[T]QTQ) and (RQRQRQR[Q]RQRQRQR).
- In the [T]-centered letter-group, the proposed Set-sum 396 of the T-based Set (participial or T narrative-links) represents the aggregate value of the related stated number-terms engraved by $Mormon_2$ in his personal book, the Book of Mormon. This study proposes that the day name of the Messiah's birth date is symbolized by the Set-sum 396, after a simplifying calculation eliminates a single 260-day count: 396 – (1x260) = 136.
- In a Mesoamerican ritual almanac that uses the day name 1 Sun as day 1 or the senior year bearer, day 136 represents 6 Owl?, which this study proposes as the day name of the Messiah's birth date and the inauguration date of the NC era some nine years later. This day name is consistent with the proposed calendrical, spring equinox, and eclipse patterns apparently symbolized by the Set-sums 2450 and 2266 in the initial narrative group of Third Nephi.
- In the [Q]-centered letter-group, the proposed Set-sum 2522 of the R-based Set (verbal or R narrative-links) in the Book of Mormon represents the aggregate value of the related stated number-terms engraved by $Mormon_2$ within the Book of Mormon. This study proposes that the day name of $Mormon_2$'s birth date is symbolized by the Set-sum 2522, after a simplifying calculation eliminates nine 260-day counts: 2522 – (9x260) = 182.
- In a Mesoamerican ritual almanac that uses 1 Sun as day 1 or the senior year bearer, day 182 represents 13 Wind, which this study proposes as the day name of the birth date of $Mormon_2$ and a vital part of his personalization of his last book.

- The derivations of these two proposed birth dates are consistent with each other, in that they are based on the maximum aggregate values of the non-prepositional narrative-links in the narrative-link letter patterns that accompany $Mormon_2$'s concluding year-terms. The day names 6 Owl? and 13 Wind correspond, respectively, to the first day in the intervals that measure the NC era and to the first day in the 365-day intervals that measure $Mormon_2$'s age. Both of these intervals are implied in the Book of Mormon, where they appear to be correlated with each other.
- The proposed birth date of $Mormon_2$ in the 310th NC calendar year preceded the end of that year by just three days. That is, $Mormon_2$ appears to have been born on the second day in the 19th month of the NC calendar year, the five-day month X. The proposed NC calendar year appears to have consisted of 365 days and a year in the life of $Mormon_2$ appears to have been the same length.
- In the context of a Mesoamerican solar-based calendar, the "nameless" days of month X appear to have been considered a time of evil, misfortune, or deception.[167] Perhaps the birth date in month X is related to his statements that he was "called Mormon, being called after the land of Mormon" and that "my father's name was Mormon".[168] That is, he may have been given the name Mormon at his birth, the name of a land where a great priest ($Alma_1$) gathered his people,[169] rather than a birth name associated with month X in the NC era calendar.

Tenth birthday: 10 Jaw [1 X 320 NC] 31 December 315 CE (1836475)

- $Mormon_2$'s tenth birthday is derived from his suggested birth date solely by the calculations 10x365 = 3650 and 1832825+3650 = 1836475.
- Four days after his tenth birthday, the New Year of the 321st NC calendar year occurred on 1 Owl? [0 G 321 NC] 4 January 316 CE (1836479). Following this New Year date, Ammaron may have closed and engraved his record of the 320th NC calendar year.
- Ten days before $Mormon_2$'s tenth birthday, the date was 13 Wind [11 F 320 NC] 21 December 315 CE (1836465), exactly 3640 days or 14 ritual almanacs after his proposed birth date. On this 13 Wind, he was nearly ten (365-day) years of age.
- Ammaron seems likely to have finished his record early in the 321st NC calendar year. Then, over a period of months during the long dry season of 321 NC and perhaps assisted by a few of the most trusted priests, he may have located and prepared a place to hide the records. When the wet season began, the records themselves may have been bundled and readied for the work of transporting and hiding them in the earth. The final tasks of moving, protecting, and secretly depositing the records may have begun

[167] Thompson, *Maya Hieroglyphic Writing: Introduction*, 106 n.6, 117-18.

[168] 3 Nephi 5:12; Mormon 1:5.

[169] Mosiah 18:1-19:1.

about 6 Owl? [0 Q 321 NC] 22 July 316 CE (1836679), near the start of the short dry season that occurred in late July and early August.

- "[A]bout the time that Ammaron hid up the records unto the Lord", $Mormon_2$ understood himself to be "about ten years of age".[170] Fifteen ritual almanacs (3900 days) after his proposed birth date, the day was 13 Wind [6 A 321 NC] 6 September 316 CE (1836725). On that day, he was still ten years of age, but closer to being eleven years of age.

Priesthood appointment: 3 Flint [2 B 321 NC] 22 September 316 CE (1836741)

- In the [T]-centered narrative-link letter-group, the proposed Set-sum 5398 of the Q-based Set (prepositional or Q narrative-links) represents the aggregate value of the related stated number-terms and referenced number-terms (quantified by stated values) engraved by $Mormon_2$ in his concluding temporal-expressions that begin with the last one in 4 Nephi 1:48. This Set-sum is directly linked with the time and work of Ammaron closing and hiding the records. The Set-sum 5398 is proposed to symbolize the day name of $Mormon_2$'s priesthood appointment as the fifth generation Nephite record keeper. A simplifying calculation eliminates 20 260-day counts and gives the Set-sum a position in the ritual almanac: 5398 – (20x260) = 198.
- In a ritual almanac that uses the day name 1 Sun as day 1 or the senior year bearer, day 198 represents 3 Flint, which this study proposes as the day name of the date on which Ammaron appointed $Mormon_2$ to his priestly role. Following this appointment, Ammaron apparently revealed the location of the hidden records to $Mormon_2$. As the succeeding official Nephite record keeper, $Mormon_2$ awoke the next morning to his first full day of priesthood authority, the astronomical autumn equinox, 4 Rain [3 B 321 NC] 23 September 316 CE (1836742).
- As thus interpreted, the [T]-centered letter-group provides two day names related to official priesthood duties. The first is 6 Owl?, which has been linked to the Messiah's birth date, the first day of the NC era, and the inauguration date of the NC era. As noted above, the day name 6 Owl? also may relate to the time when Ammaron "hid up the records unto the Lord"[171] in the short dry season of 321 NC. The second day name provided by the [T]-centered letter-group is 3 Flint, which is proposed to be the date when $Mormon_2$ received his priesthood appointment and accepted the duties and responsibilities of an official Nephite record keeper. Eventually, his duties seem likely to have included reckoning and announcing the years of the NC era calendar, and protecting and lengthening the Nephite record throughout his life.

[170] Mormon 1:2.

[171] Ibid.

Eleventh birthday: 11 Quake [1 X 321 NC] 30 December 316 CE (1836840)

- $Mormon_2$'s 11th birthday is derived from his suggested birth date solely by the calculations 11x365 = 4015 and 1832825+4015 = 1836840.
- Four days after his 11th birthday, the New Year of the 322nd NC calendar year occurred on 2 Sun [0 G 322 NC] 3 January 317 CE (1836844). Beginning with this date, $Mormon_2$'s memories and notes about the events of the 321st year could have been compiled for eventual engraving when he was "about twenty and four years old".[172]

The 12th year war begins: 8 Lord [19 G 322 NC] 22 January 317 CE (1836863)

- In the [Q]-centered narrative-link letter-group, the proposed Set-sum 3960 of the Q-based Set (prepositional or Q narrative-links) represents the aggregate value of the related stated number-terms engraved by $Mormon_2$ in the Book of Mormon. A simplifying calculation eliminates 15 260-day counts and gives the Set-sum a position in the ritual almanac: 3960 – (15x260) = 60.
- In a ritual almanac that uses the day name 1 Sun as day 1 or the senior year bearer, day 60 represents the day name 8 Lord, which this study proposes as the day name of the last day (19 G) of the first month of the 322nd NC calendar year.
- By noting the last day of the first month, $Mormon_2$ may have implied that he became aware of the war in his 12th year during the month in which the war began with a Lamanite invasion "in the borders of Zarahemla by the waters of Sidon".[173] A territorial war beginning in late January appears to be a typical dry season war in Mesoamerica.[174]

The 12th year war ends: 3 Lord [19 J 322 NC] 23 March 317 CE (1836923)

- In the [T]-centered narrative-link letter-group, the proposed Set-sum 4280 of the Q-based Set (prepositional or Q narrative-links) represents the aggregate value of the related stated number-terms engraved by $Mormon_2$ in his concluding temporal-expressions that begin with the last one in 4 Nephi 1:48. A simplifying calculation eliminates 16 260-day counts and gives the Set-sum a position in the ritual almanac: 4280 – (16x260) = 120.
- In a ritual almanac that uses the day name 1 Sun as day 1 or the senior year bearer, day 120 represents 3 Lord, which this study proposes as the day name of the last day (19 J) of the fourth month of the 322nd NC calendar year.
- By noting the last day of the fourth month, $Mormon_2$ may have indicated that he became aware of the end of the war in his 12th year during the fourth month of 322 NC. The connection of the end of the war with Ammaron's inspired hiding of the sacred records may suggest that he had

[172] Mormon 1:3.

[173] Mormon 1:8-10.

[174] See Section 3.8.9 above.

been anticipating Nephite difficulties in any new territorial wars that may have occurred with the Lamanites.[175]

Installation in Zarahemla: 8 Flint [17 K 322 NC] 10 April 317 CE (1836941)

- After $Mormon_2$ was 11 years of age and, apparently, after the Nephite defeat of the Lamanite invasion in 322 NC, the boy was "carried by [his] father", and perhaps with his father and at his father's expense, "into the land southward, even to the land of Zarahemla".[176] Presumably, $Mormon_2$ then began the intense religious, scribal, military, calendrical, and astronomical training required to perform the duties of the official Nephite record keeper.
- In the [Q]-centered narrative-link letter-group, the proposed Set-sum 5078 of the Q-based Set (prepositional or Q narrative-links) represents the aggregate value of the related stated number-terms and referenced number-terms (quantified by stated values) engraved by $Mormon_2$ within the Book of Mormon. This study proposes that the day name of $Mormon_2$'s priesthood installation in Zarahemla is symbolized by the Set-sum 5078, after a simplifying calculation eliminates 19 260-day counts: 5078 – (19x260) = 138.
- In a Mesoamerican ritual almanac that uses the day name 1 Sun as day 1 or the senior year bearer, day 138 represents 8 Flint, which this study proposes as the day of $Mormon_2$'s installation in Zarahemla. Another possibility may be that 8 Flint represents the day when $Mormon_2$ left his home to travel south to Zarahemla, but that event seems much less important than his installation in Zarahemla to begin his new official life (perhaps under the tutelage of Ammaron, whose year of death is not mentioned).
- The April timing of this 8 Flint is during the long dry season, when travel may have been less arduous. In addition, the Nephite victory over the invading Lamanites appears to have preceded $Mormon_2$'s travel to Zarahemla by several weeks. The following 8 Flint in this year seems too distant from the victory; it did not occur until [17 F 322 NC] 26 December 317 CE (1837201).

Fifteenth birthday: 2 Quake [1 X 325 NC] 29 December 320 CE (1838300)

- $Mormon_2$'s 15th birthday is derived from his suggested birth date solely by the calculations 15x365 = 5475 and 1832825+5475 = 1838300.
- Fifteen days before $Mormon_2$'s 15th birthday, the date was 13 Wind [6 F 325 NC] 14 December 320 CE (1838285), exactly 5460 days or 21 ritual almanacs after his proposed birth date.
- Four days after his 15th birthday, the New Year of the 326th NC calendar year occurred on 6 Sun [0 G 326 NC] 2 January 321 CE (1838304).

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[175] 4 Nephi 1:48-49.

[176] Mormon 1:6-7.

Vision: 7 Lord [19 J 326 NC] 22 March 321 CE (1838383)

- After $Mormon_2$ was 15 years of age, he was "visited of the Lord and tasted and knew of the goodness of Jesus".[177]
- The proposed date of this visitation is derived from the smaller of the two alternative Set-sums (80 and 117) associated with the nine temporal-expressions that describe events related to $Mormon_2$'s early life in the Book of Mormon. The reported events lead up to his report of the end of the 326th NC calendar year. This Set is suggested by, and is consistent with, the Set in Third Nephi that describes the interval leading up to the inauguration of the NC era.
- The proposed Set-sum 80 represents the aggregate value of the associated stated number-terms engraved by $Mormon_2$. This study proposes that the date of $Mormon_2$'s vision of the Lord is symbolized by the Set-sum 80. The starting date of this 80-day interval is the New Year 6 Sun [0 G 326 NC] 2 January 321 CE (1838304). Seventy-nine days later, the ending date is 7 Lord [19 J 326 NC] 22 March 321 CE (1838383).
- The proposed visitation date is the first day to follow the spring equinox confirmation date in that year, 6 Rain [18 J] 21 March.[178] On 6 Rain, a total of 325 tropical years had elapsed since the proposed 5 BCE birth date of the Messiah on the spring equinox confirmation date of that year. $Mormon_2$'s vision may have occurred in connection with his involvement in the spring equinox anniversary, which perhaps was his most important ceremonial event since his appointment by Ammaron.
- The spring equinox of 326 NC began a four-year period leading up to the spring equinox of 330 NC, when a full 80-day misalignment between the spring equinox and the NC era New Year could be observed and recorded as a testament to the Nephite priest-astronomers accurate work.
- $Mormon_2$ also states that "in that same year [when he was 15 years old] there began to be a war again between the Nephites and the Lamanites".[179] A Lamanite spring equinox invasion may have been timed to disrupt the Nephite celebrations and surprise their armies. $Mormon_2$'s visitation by the Lord also may have come in response to his prayers, pleading for the deliverance of his people from the Lamanite invasion.

Military appointment: 5 Quake [16 L 326 NC] 28 April 321 CE (1838420)

- Apparently, less than two (20-day) months after $Mormon_2$'s vision, the need for a new Nephite military commander arose and $Mormon_2$ received the appointment. He was still in his 16th year when "the people of Nephi appointed [him] that [he] should be their leader, or the leader of their

[177] Mormon 1:15.

[178] The GISS computation tool on the NASA website calculates that the astronomical spring equinox occurred at 3:43 GMT on 21 March 321 CE, which is equivalent to 21:43 CST on 20 March in Mesoamerica. Hence, the observational and calendrical confirmation of the equinox may have occurred on 21 March. See data.giss.nasa.gov/modelE/ar5plots/srvernal.html.

[179] Mormon 2:1.

armies". Upon being appointed, he "did go forth at the head of an army of the Nephites against the Lamanites".[180]

- The date of this military appointment is derived from the larger of the two alternative Set-sums (80 and 117) associated with the nine temporal-expressions that begin the Book of Mormon. The starting date of this 117-day interval is the New Year 6 Sun [0 G 326 NC] 2 January 321 CE (1838304). One-hundred sixteen days later, the ending date is 5 Quake [16 L 326 NC] 28 April 321 CE (1838420). A single day named 5 Quake occurs in 326 NC and it appears late in the long dry season, a typical period of territorial warfare among the Maya.[181]
- $Mormon_2$ describes himself as "young" and "large in stature", but he also seems likely to have undergone four years of intense training for an elite Nephite leader (including military training). The Nephites' timing of the appointment (late April) and selection of a youth to lead their armies (perhaps because previous military commanders had been killed, seriously wounded, or captured by Lamanites) also may suggest that $Mormon_2$'s army was made up of fresh troops with orders to resupply and reinforce the armies at the front, and to drive the remaining enemy forces out of Nephite lands before the first planting was required to begin in May.

3.10 The end of the NC era in the plates of Mormon

Near the end of the Book of Mormon, $Mormon_2$ implies that the 384th NC calendar year had ended.[182] His statement assumes a continuation of the NC era context to that time. In the following implied 385th NC calendar year, he delivered "these few plates" (the attached plates of Mormon and small plates of Nephi) to his son $Moroni_2$, along with his hope that his son would survive the coming Nephite battle "that he may write somewhat concerning them and somewhat concerning Christ, that perhaps some day it may profit them".[183] As Table 3.I of this Division indicates, the New Year of $Mormon_2$'s final year appears to have occurred on 13 Owl? [0 G 385 NC] 19 December 379 CE (1859839). On that day, $Mormon_2$ was four days into his 75th year. Twenty-six days later, the day was 13 Wind [6 H 385 NC] 14 January 380 CE (1859865), exactly 27040 days or 104 ritual almanacs since the proposed birth date of $Mormon_2$ in 310 NC. In terms of the 260-day year, he also could have been described as 104 years old.[184] With a four-year treaty of peace reaching its end about that time, $Mormon_2$ and his people did "behold the armies of the Lamanites a marching towards them". The last great battle was upon them "and every soul was filled with terror because of the greatness of [the Lamanite] numbers".[185]

Some 15 years later, $Moroni_2$ added a final reference to the NC era context in the plates of Mormon. His father and he, and a few others, had survived the battle and gone into hiding. His father survived long enough to describe the end of the Nephite people and to conclude the record with his mourning, his witness of Christ, and his call for descendants of $Lehi_1$ to "repent and be

[180] Mormon 2:1-2.

[181] See Section 3.8.9 above.

[182] Mormon 6:5.

[183] Words of Mormon 1:1-2.

[184] Compare Ether 9:24.

[185] Mormon 6:7-8.

baptized in the name of Jesus and lay hold upon the gospel of Christ".[186] $Mormon_2$ left just enough room on his last plate for his son, at a then-distant date, to add a few final notes and the last temporal-expression. In the dismal hours a few days after the Nephite slaughter, $Mormon_2$ issued crucial military commands to his warrior son $Moroni_2$: survive, hide and protect these few plates, and after 15 more dry seasons have passed, add your own brief notes about the end of our people and your faith in the Savior, and state the end of the Nephite era: "four hundred years have passed away since the coming of our Lord and Savior".[187]

The abridged record of those 400 years is partially summarized in the year-related narratives that accompany the temporal-expressions referenced in Table 3.I of this Division. In this Part, the chronological structure and symbolism of the initial narrative groups of Third Nephi and the Book of Mormon have been analyzed and compared. However, Third and Fourth Nephi and the Book of Mormon appear to contain other narrative groups that have been organized in terms of their symbolism. In Part 4 of this Division, the examination introduces the analysis of the other narrative groups of Third Nephi.

[186] Mormon 6:9-7:10.

[187] Mormon 8:1-13.